

The Only Weekly Mining Paper in the Union and Rhodesia.



ESTABLISHED 1891

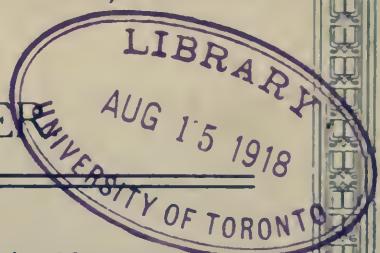
PUBLISHED EVERY SATURDAY

VOL. XXVII., PART I. NO. 1362.] JOHANNESBURG, TRANSVAAL, SATURDAY, NOV. 3, 1917. [WEEKLY, PRICE 6D.

THE
BRITISH WESTINGHOUSE
ELECTRIC AND MANUFACTURING COMPANY, LTD.

HEAD OFFICE AND WORKS:

TRAFFORD PARK, MANCHESTER



Our Works

are the largest of their kind in the British Empire, occupying over eighty acres, thirty-two of which are roofed in. They are equipped with the most up-to-date machinery and organised on the most scientific lines.

Our Staff

which includes some of the cleverest engineers in the world, is approximately nine thousand strong.

Our Manufactures

Include
Steam Turbines
Condensers
Gas and Oil Engines
Diesel Engines

Equipments for—
Electric Railways
Electric Tramways
Electric Winding Engines
Electric Rolling Mills

and everything necessary for Power Stations, and the production, distribution and application of electricity for the workshop or the home.



Head Office for South Africa: CONSOLIDATED BUILDING, JOHANNESBURG

ROBERT HUDSON & SONS, LTD.,

Representing ROBERT HUDSON, LTD., Gildersome Foundry, near Leeds.

MANUFACTURERS OF

Tramway Material for Mines, Plantations, etc.

U-SHAPE TIP TRUCKS for Underground Use
for Carrying Quartz.

V-SHAPE TIP TRUCKS and
SIDE DISCHARGE TRUCKS
for Surface Work.

STEEL WAGONS for Gold and Diamond Mines.

HOPPER WAGONS from 1 to 40 tons capacity.

STEEL TUBS for Collieries.



A. 387.—Patent V-Shape Double Side Tip Truck (for mining use).

SELF-OILING WHEELS AND AXLES. BEARINGS.
LIGHT LOCOMOTIVES.

STEEL RAILS. ACCESSORIES. STEEL SLEEPERS.
POINTS AND CROSSINGS.

PRICES AND SPECIFICATIONS ON APPLICATION.

BRANCHES AT DURBAN AND DELAGOA BAY.

STOCKS HELD AT
JOHANNESBURG, DURBAN, DELAGOA BAY, BEIRA, SALISBURY, ETC.

Rhodesian Agents:—P. PEECH & CO., Salisbury, Rhodesia.

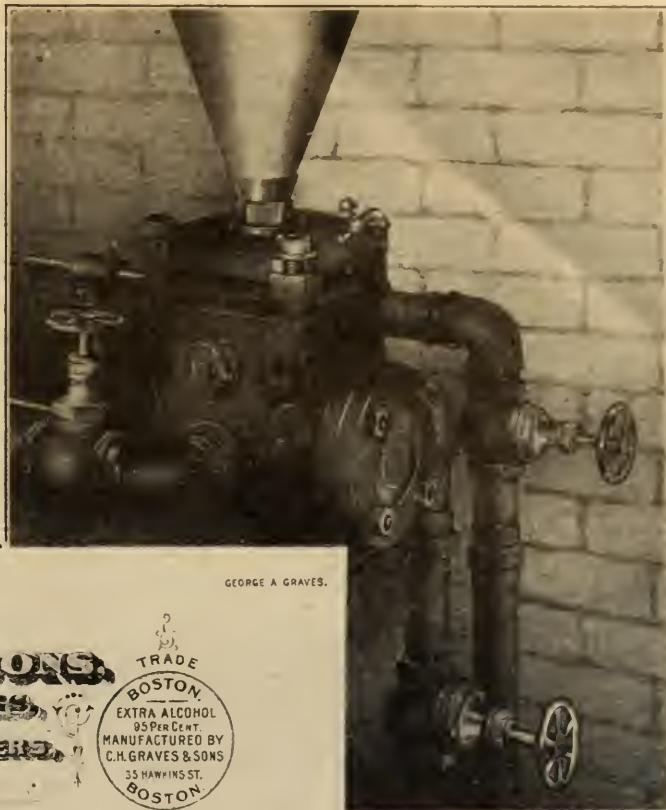
PHONE 1731. P.O. BOX 5744. Tel. Add. : "RALETRUX."

HEAD OFFICES: 81, 82, 83, 84, Cullinan Building, Johannesburg.

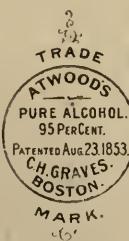
Since 1869—Still Using Them

Jenkins Bros. Valves

A Letter That Has A Message For All Valve Users—Read It.



EDWARD G. GRAVES.



C. H. GRAVES & SONS,
ALCOHOL DISTILLERS, AND
WHOLESALE LIQUOR DEALERS,
35 HAWKINS ST.
BOSTON.



GEORGE A. GRAVES.

July 3, 1912.

Mess. Jenkins Bros.,

Gentlemen:-

It may interest you to know that we have in our plant some Jenkins Bros.' Valves that were installed almost half a century ago. We are sending you a photo reproduction of three of these valves. They were installed in 1869, at the time our present plant was built, making 43 years that the valves have been in actual, constant service.

There are in use in our plant approximately one hundred valves of your make, many of which have been in use about the same number of years, and other than putting in a new disc occasionally, they have put us to no repair expense whatever.

Taught by this experience, when requiring additional valves we always specify Jenkins Bros.

Very truly yours,



The illustration does not show the Jenkins Bros. Diamond Trade Mark on the valves. They were installed in the "old days" before we put our trade mark on the body of every valve we make. Now, however, the trade mark is there—for your protection. Look for it.

SOLE AGENTS :

C. WHARTON HOOD & CO. (S.A.) Ltd.

P.O. Box 6096.

Phone 973.

OFFICES: SOUTHERN LIFE BUILDINGS,
HARRISON STREET, JOHANNESBURG.

“INDUSTRY AS USUAL.”

LIST OF

Manufacturers & Agents belonging to the British Empire, her Allies & Friends.

HERBERT AINSWORTH.

Engineer and Merchant, 304-307, The Corner House, Johannesburg, South African Agent for Green's Patent Fuel Economisers, Kennicott Water Softeners, Wood's Colliery Plants and Winches. Canadian Carbide, "S" Brand.

EDGAR ALLEN & CO., LIMITED.

5, New Club Buildings, Loveday Street, Johannesburg, Miner's Drill Steel, High Speed Steel, Engineer's and Smith's Tool Steel, Tappet Key and Gilt Steel, Manganese and Hard Steel, Grizzley Bars, Tube Mill Liner Bars, Skip Wheels, Truck Wheels and Axles, Twist Drills, Shovels, Hammers, Shoes and Dies, Buffers, Railway and Tramway Points and Crossings, Ore Crushers, Tube Mills, Cement Kilns, etc.

BARTLE & CO., LTD.

Loveday House, Johannesburg. 'Phones 3553-4. Sole Agents for Sanderson Bros. & Newbould, Ltd., Sheffield; F. Reddaway & Co., Ltd., Manchester; Henry Pooley & Son, Ltd., Birmingham; John Shaw, Ltd., Sheffield; J. W. Roberts, Ltd., Leeds; Gimson & Co., Ltd., Leicester; T. Lister & Co., Ltd., Brighouse; John Davis & Son, Ltd., Derby; Unity Safety Fuse Co., Scorrer; F. Bartle & Sons, Carn Brea; and many other well-known British Manufacturers.

BRITISH GENERAL ELECTRIC CO., LTD.

Corner Loveday and Anderson Streets, Johannesburg. Electrical Plant and Supplies of all descriptions. 'Phones 4242-4243; Telegrams, "Current"; Box 2406. Branches at Cape-town, Durban, Bulawayo, etc.

CHRISTOPHER & SHILLITO, LTD.

Engineers and Iron Founders, corner of Miller and Eighth Streets, New Doornfontein, Johannesburg; P.O. Box 1082. Works 'Phone 2184. Specialities: Steelwork, Castings, Trucks, Coal Tubs, Forgings, Tanks, Pump Spares, Mill Spares, Shoes and Dies (Old Park Forge, Sheffield, England).

HUBERT DAVIES & CO.

Electrical and Mechanical Engineers, for all kinds of Electrical Machinery and Supplies. Johannesburg, Durban, Cape-town and Salisbury (Rhodesia).

FATTI'S S.A. MACARONI FACTORY.

Fatti's Macaroni Factories are the suppliers of the much-appreciated Soup-Macaroni for the Mine Boys. They inform the Mine and Compound Managers that in spite of the present high cost of the flour their price for this healthy and very nourishing food has been kept at the pre-war level, thus making MACARONI the MOST ECONOMICAL food of the present time. For orders and quotation please apply to Box 1139, or 'Phone 962, Johannesburg.—L. Fatti and Co., Ltd.

FRASER & CHALMERS, LTD.

Farrar Buildings, Simmonds Street, Johannesburg; also representing Holman Bros.; T. & W. Smith, Ltd.; Tangyes, Ltd.; G. & J. Weir, Ltd.; and many other British Agencies.

HADFIELDS LTD.

(Incorporated in England.)

46-47, Cullinan Buildings. 'Phone 5900, Johannesburg. Cast Steel Gyrating and Jaw Crushers and Crusher Spares, Wheels and Axles, Pedestals, Rollers, Pulleys and General Steel Castings.

ROBERT HUDSON & SONS, LIMITED.

Works: Gildersome Foundry, near Leeds. 83-4, Cullinan Buildings, 'Phone No. 1731. Telegraphic Address: "Raletrux." Manufacturers of all classes of Light Railway Material for Mining and Constractor use. Rails in all weights per yard. Switches and Crossings, Standard Trucks of various capacities kept in stock.

INGERSOLL-RAND CO.

Exploration Building, Johannesburg. Air Compressors, Rock Drills, Hose, Steel, Pneumatic Tools, Cameron Pumps, Leyner Drill Sharpeners, Davis Calyx Coil Drills.

PHOENIX FOUNDRY.

Iron and Brass Founders, General Engineers and Blacksmiths. Office and Works: Hay Street, Ophirton. P.O. Box 3031, Johannesburg. 'Phone 1641. Sole Agents for Carntyne Steel Castings Co., Glasgow. Stocks of Tappets, Skip Wheels, Heads, etc. Casting Specialties: Pipe Fittings, White Iron Pump Spares and Tube Mill Liners.

REUNERT & LENZ, LTD.

Consolidated Building (3rd Floor), Johannesburg; P.O. Box 92; Telephone No. 3061. Sole Agents for North British Locomotive Co., Ltd.; Leeds Forge Co., Ltd.; Babcock and Wilcock, Ltd.; Belliss & Morcom, Ltd.; Davidson & Co., Ltd.; Frank Pearn and Co., Ltd.; "Atlas Rock Drills," John Stephens and Son, Ltd.; E. and W. Lucas, Ltd.; Sir Joseph Jonas, Colver & Co., Ltd.; John Spencer & Sons, Ltd.; and many other high-class British Manufacturers.

J. V. STANTON & CO.

Southern Life Buildings, Representing: Phoenix Dynamo Manufacturing Co., Ltd. (Bradford, England), Electrical Plant; Park Royal Engineering Works, Ltd. (London), Switchgear, Instruments, "Rex" Fire Extinguishers; Fleming, Birkby and Goodall, Ltd. (Liversedge, Eng.), Tramway Equipments; Henry Wiggin and Co., Ltd. (Birmingham, Eng.), Resistance materials; Walsall Hardware Manufacturing Co. (Walsall, Eng.), Conduits, etc.; Canadian Porcelain Co. (Hamilton, Canada), Insulators, etc. Mining Material other than Electrical, also stocked.

S. SYKES & CO., LTD.

Southern Life Buildings, Johannesburg. Telephone No. 2190. P.O. Box 2303. Telegrams: "Psyche." Sole Agents for Robey & Co., Ltd.; Crossley Bros., Ltd.; E. R. & F. Turner, Ltd.; Worthington Pump Co., Ltd.; C. A. Parsons & Co., Ltd.; Crompton & Co., Ltd.; Reyrolle & Co., Ltd., and Sandycroft, Limited.

E. W. TARRY & CO., LTD., Austral Iron Works.

Corner of Anderson and End Streets, Box 1098. 'Phones 149 and 626, Johannesburg. Iron and Brass Founders and General Engineers. Machine Cut Gears in Raw Hide and any Metal a speciality, and in Cast Iron up to 18 feet diameter. Sole Manufacturers and Agents for Tregaskis Patent Drill Heating Furnace.

TRANSVAAL GRAPHITE M. & M. CO., LTD.

(W. M. HUDSON, Managing Director.)

Foundry Plumbago. Flake Graphite. Pipe Jointing. "Murrella" Boiler Composition. Graphite Pigment. Electrical Graphite, etc. Offices and Works: 234 Anderson Street, Johannesburg. 'Phone 2560.

WADE & DORMAN, LTD.

Work of all kinds. Large Stocks of Joists, Channels, Angles, Tees, Plates, Chequered Plates, etc. Agents for British Steel Piling Co. Stockyard and Works: 217, Main Street.

WHARTON HOOD & CO., LTD.

Box 2997; Telephone 1460, Johannesburg. Structural Steel Box 6096, Telephone 973, Tel. Address: "Castings." Sole Agents for Jenkins Bros., Ltd., Montreal; Geo. Christie, Ltd., Glasgow; James Walker & Co., Ltd., London; Garlock Packing Co., New York. Offices: Southern Life Buildings, Johannesburg.

C. F. WIENAND.

Commercial Exchange Buildings, Johannesburg; 'Phone 3. Sole Agent for Toledo Steels of all classes, Butterley Iron, Barwell's Bolts, Scott's Ropes, Mine Lubricants, Ltd. All highest quality.

PROFESSIONAL DIRECTORY.

LITTLEJOHN & WHITBY,

ASSAYERS TO THE
AFRICAN BANKING CORPORATION,
NATIONAL AND NATAL BANKS.

CONSULTING ANALYTICAL
CHEMISTS AND METALLURGISTS.

P.O. Box 849. Phone 1633.

Office and Laboratories:
24, SIMMONDS STREET, JOHANNESBURG.

Assays and analyses of all Minerals, Drugs, Foods, Water, Milk, Oils, etc., undertaken.

Experiments conducted. Reports made as to the treatment of any class of Ore.

PATENTS AND TRADE MARKS.

D. M. KISCH & CO.,
(C. H. M. KISCH—A. L. SPOOR).

ESTABLISHED 1874.

Members Chartered Inst. of Patent Agents, London.

COLONIAL AND FOREIGN PATENT AGENTS.

The Firm undertake the Patenting of Inventions, and the Registration of Trade Marks throughout the world; the Preparation, Revision or Amendment of Specifications and Drawings; reporting on Validity and Infringements; obtaining copies of Specifications and Drawings of Patents granted; Searches through the Patent Office Records; the conduct of Oppositions, and all other matters relating to Patents and Trade Marks.

No. 16 to 19a, NATIONAL MUTUAL BUILDING,
Corner of Rissik and Market Streets.

P.O. Box 668. Telephone No. 774.

FOR SALE.

200,000 feet New Piping.

20,000 feet Second-hand Piping.

New and Second-hand Steel Plates.

Second-hand Timber and Corrugated Iron.
Engines, Boilers and Pumps.

WRITE FOR QUOTATIONS.

A. SONNENBERG & CO., LTD.,

115, Marshall Street, Johannesburg.

Phone 1582.

Box 4297.

J. GOULDIE, C. & M.E., M.I.M.E.,
CONSULTING ENGINEER.

Late Manager to the De Beers and other Diamond Mines.
30 years practical experience in Diamond, Gold, Coal, and Metalliferous Mining in South Africa, and holder of Mine Manager's Certificate (First Class).

Mines and Mineral Propositions Inspected and Reported Upon.

Office: 62, Standard Bank Chambers, Commissioner St.,
JOHANNESBURG.

Phone 2225. Telegraphic Address: "Edloug, Johannesburg."

Code: Imperial Combination and A.B.C. (5th edition).

Reference: The National Bank of South Africa, Limited, here and in London.

Castle Chambers, 134, Fox St.,
Johannesburg.

THE SCIENTIFIC INSTRUMENT WORKS

WM. G. LINDEMANN, ASSOC S.A.S.M.T.

ELECTRICAL AND MECHANICAL ENGINEERS.

MINING THEODOLITES & SURVEYING INSTRUMENTS
A SPECIALITY.

SOLE MAKERS OF THE KOTZÉ KONIMETER.

RULED GLASS DIAPHRAGMS AND
MICROMETERS MADE TO ORDER.

Survey Spads, Plumb-bobs, Stadia-hairs, Brunsviga Calculating Machines, Microscopes, Atomisers, Mahler Bombs, Assay Balances, &c., &c., Stocked and Repaired.

THE S.A. MINING YEAR BOOK

1917-18.

By S. E. POTTER.

The Standard Reference Work on South African Mines.

NEW EDITION NOW READY.

Price 15/- net. Post free 17/6. 520 pp. In Cr. Folio, Cloth, Gilt Letters
Obtainable from the Office of this Paper.

A Recognised Indispensable Work of Reference

For Mining Investors, Mining Engineers, Mine Managers, Bankers, Stockbrokers, Solicitors or anyone interested in the Mining Industry

A RECORD OF INFORMATION concerning Mining Companies operating in all parts of South Africa, Gold, Diamond, Copper, Tin and other Mines, Collieries, Exploration, and Mining Investment Companies. Data twelve months ahead of those in other works of reference.

SOME PRESS OPINIONS.

"A complete account of the present position and future prospects of South African Mines, put on permanent record for ready reference."—"The Star."

"The only authoritative work of reference on South African mining companies produced in this country."—"Rand Daily Mail."

"To holders of Kaffir shares and prospective investors this is an aggregate of authoritative information that has a distinct value."—"Financial News."

Cable:
"McKECHNIE,
WIDNES."

McKECHNIE BROTHERS, LIMITED.

SMELTING WORKS: WIDNES, ENGLAND.

BIRMINGHAM, NEWCASTLE, MANCHESTER, LEEDS AND BRISTOL.

LONDON OFFICE: 11, LOMBARD STREET, S.E.

BUYERS OF

COMPLEX ORES

Which contain COPPER.

COPPER-TIN ORES.

COPPER-LEAD ORES.

COPPER-ZINC ORES.

RESIDUES, MATTES, CONCENTRATES,

PRECIPITATES.

South African War Market.



A GREAT NATIONAL EFFORT.

ONE HUNDRED THOUSAND POUNDS!

This is the sum aimed at to swell the Governor-General's Fund as a result of the Gigantic War Market to be held in December next.

SOUTH AFRICA is putting her best efforts into this national undertaking. Every section of the community—miners and magnates, merchants and mechanics, farmers and fruit growers—every store, mine, warehouse and workshop will give ungrudgingly of time, labour and kind—no one is too small or too poor to do his or her bit.

THE SCHEME EXPLAINED.

FOR the purpose of raising £100,000 for the Governor-General's Fund, everyone is asked to contribute something of saleable value.

EVERY effort made to ensure the success of the War Market must be an additional effort. It must not interfere with, or cause any relaxation of, what is already being done to support the Governor-General's Fund.

THE total proceeds of the War Market will be OUR Christmas Gift to OUR Fund—the Fund that provides for the legitimate claims of OUR men and their dependents.

SEPARATE Sections will be devoted to Agriculture, Mining, Commerce, Industry, Fêtes, Amusements, and many others.

ALL the departments of the War Market will be stocked with the Goods and Articles received as contributions, and these will be offered for sale.

COMMITTEES representative of all these departments are now energetically working, under the direction of the Central Organisation, to ensure the record-making success of the Fair. Additional help will be welcomed. Those able and willing to assist in any honorary capacity are invited to communicate their offers to the Organising Secretary.

THE undertaking is a national one. For every South African owes a duty to the men, and dependents of the men who are fighting South Africa's battles.

WOMEN OF SOUTH AFRICA.

YOU are asked to contribute something saleable; something made by your own hands; something grown on your garden or farm; something purchased by you in the stores; something that you think any woman would like to buy.

MEN OF SOUTH AFRICA

who cannot fight, can give. Let this be your opportunity for doing your bit. Tradesmen, mechanics, handy men—you can make some simple article in your own time. Make it your hobby for the next few weeks. Manufacturers should provide time and materials for their workmen to make articles for contribution.

DON'T think any contribution will be too small to count in the grand total of £100,000 War Market. Forget the hundred thousand and feel that your contribution will be the means of helping a South African hero or his dependent—and a nobler cause you will never subscribe to.

ABOVE ALL, TALK ABOUT THE WAR MARKET. LET IT BE ON EVERYBODY'S LIPS, THE MORE PUBLICITY IT GETS THE MORE IT WILL BECOME A SUBJECT OF LIVELIEST INTEREST TO THE WHOLE COMMUNITY—THE MORE IT WILL BE HELPED—THE MORE THE FUND WILL BENEFIT.

Modderfontein East, Ltd.

(Incorporated in the Transvaal.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the first Ordinary General Meeting of Shareholders for the period ending 30th September, 1917, will be held in the Board Room, Second Floor, The Corner House, Johannesburg, on WEDNESDAY, the 19th DECEMBER, 1917, at 11 a.m., for the following business:—

1. To receive and consider the Balance Sheet and Accounts for the period ending 30th September, 1917, and the Reports of the Directors and Auditors.
2. To determine the remuneration of the Auditors for the period ending 30th September, 1917, and to appoint Auditors for the ensuing period.
3. To transact any other business which may be transacted at an Ordinary General Meeting, or which is brought under consideration by the Report of the Directors.

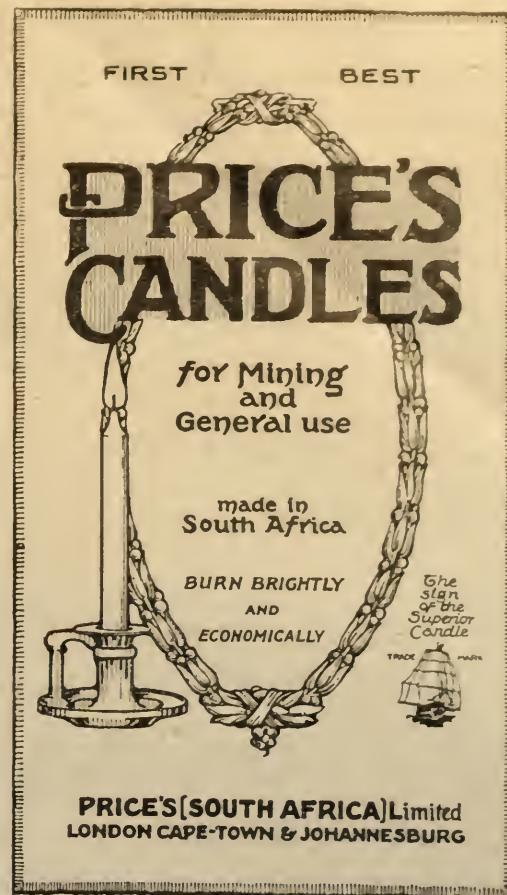
The Share Transfer Books of the Company will be closed from the 19th December, 1917, to the 25th December, 1917, both days inclusive.

By Order of the Board,

RAND MINES, LIMITED, Secretaries.

S. C. STEILL, Secretary.

Head Office, The Corner House,
Johannesburg, Transvaal,
29th October, 1917.



Elastic, Tough, and Excellent
Covering Capacity.

EVANS' ROOF PAINT.

Marseilles Tile Colour, No. 52. The Fashionable Shade.

Dark Brown Colour, No. 55. A Useful Shade.

Rich Red Colour. The Famous No. 3.

10/6 Per Gallon.

50/- Per 5-Gallon Drum.

READY FOR USE.

HERBERT EVANS & CO.,
VON BRANDIS SQUARE, JOHANNESBURG.

Box 1231.

'Phones 2214-17.



Engineering Works and Foundries.

ESTABLISHED 1888.

Wright, Boag & Co.

ENGINEERS AND FOUNDERS.

Offices: Frederick Street.

Works: Marshall's & City and Suburban Townships.

Telephones:
1056 and 1057.

P.O. Box
545.

Tel. Add.:
"SWIVEL."

JOHANNESBURG.

Austral
Iron
Works.

ENGINEERS AND FOUNDERS.

Special Metal for
wearing plates for
Tube Mills and
Centrifugal Pumps.

Machine Cut Gears in Raw Hide or any Metal a
Speciality.

And in Cast Iron up to 18 feet diameter.

Sole Agents and Manufacturers of Tregaskis'
Drill Heating Furnace.

E. W. TARRY & Co., LTD.

Anderson and End Streets,

JOHANNESBURG.

Phone 149.

Box 1098.

Tel. Add.: Austral."

P.O. Box 3960.

Telephone No. 877

W. H. BATTEN (Late BATTEN & EDGAR)

The RAND BOILER, TANK,
:: and IRON WORKS. ::

Trucks, Steel Cyanide Tanks, Chimneys, Cones, Skips, and all
Mining Plate Work a speciality.

Office and Works: Albert, Gold, Durban and
Nugget Streets, City and Suburban.

P.O. Box 11, Denver.

Phone 154, Central.

DENVER ENGINEERING WORKS.

Chisholm Stevenson & Co., Ltd.

Main Reef Road, Denver.

ENGINEERS, BLACKSMITHS,
IRON & BRASS FOUNDERS.

Makers of Haulage Gears, Tanks, Trucks, Cones, Cages,
and Mining Machinery of all descriptions.

ENQUIRIES INVITED.

ESTIMATES GIVEN.

SOUTH AFRICAN WELDING AND LIGHTING GAS WORKS.

P.O. Box 5185.

Tel. No. 2046.

LESSEES FROM

SOUTH AFRICAN DISSOLVED ACETYLENE, Ltd.

Welding Shop: 29, Von Weilligh St., Johannesburg.
Gas Works:

No. 4, Thornton's Sheds, Van Beek St., Doornfontein.

Welding by High and Low Pressure Systems.
Constructional and Repair Work in Shop or at Mine.
Boiler Work and Plate-Cutting a Speciality.
All classes of Cast or Steel Fittings made up to order.

THE SOUTH AFRICAN MINING JOURNAL.

The Only Weekly Mining Paper in the Union and Rhodesia.

**VERDITE MINES,
LIMITED.**

Offices and Showrooms | STOCK EXCHANGE,
JOHANNESBURG.

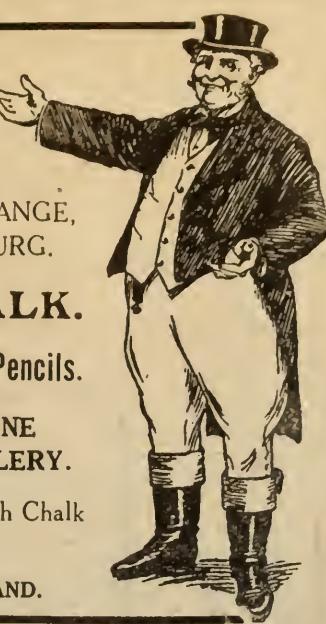
FRENCH CHALK.

Engineers' & Boilermakers' Pencils.

VERDITE GREENSTONE
ORNAMENTS & JEWELLERY.

Special Quotations for French Chalk
to Manufacturers.

STOCKS ALWAYS ON HAND.



**Britannia Engineering Co.
LIMITED.**

General and Mechanical Engineers.

IRON AND BRASS FOUNDRERS.
BOILER AND GENERAL SMITHS.

Repairs and Renewals promptly and efficiently executed.
Sole Makers of the Hearn Patent Pendulum Pump.

201-3-5, Main Street and 220-2-4, Fox Street,
Box 1558. JOHANNESBURG. 'Phone 896.

STEWART, SANDERS & Co., Ltd.

Manufacturers of all kinds of

BOLTS, NUTS & RIVETS, SKIPRAIL CLIPS,
CLUTCH BOLTS, FANG NUTS, &c.

Importers of Bar Iron and Steel.

Equipment of the Latest Pattern. Work of the Best.

Works—Corner End & President Streets, Johannesburg.

Offices—205, President Street E.

Phone 6143 Central. Box 4422. Telegrams: "Nutanbolt."

ORDER ONLY THROUGH MOSENTHAL BROS., LIMITED.

SUPPORT SOUTH AFRICAN INDUSTRY.

Phone 1875. P.O. Box 4782. Tel. Add.: "PRAESENS."

M. ESPLEY JONES,

Merchant in Mining Materials.

Sole South African Agent for Garside
Engine Waste and Sponge Cloths.

Contractor to South African Railways, Witwatersrand
Gold Mines, Collieries, etc.

Large Stocks of Various Grades carried Locally.

9a, Commercial Exchange, Main St.,
JOHANNESBURG.

Tell advertisers you saw it in the *South African Mining Journal*.

IMPORTANT TO SECRETARIES OF COMPANIES.

THE ARGUS PRINTING AND PUBLISHING COMPANY,
LIMITED, make a Speciality in the

PRINTING OF COMPANIES' ANNUAL REPORTS,

and can execute these

IN TWENTY-FOUR HOURS AFTER RECEIPT OF COPY.

THE NEW MACHINERY LATELY INSTALLED IN THEIR WORKS is the means of their
expediting this particular class of work.

ESTIMATES GIVEN ON APPLICATION TO

The Argus Printing & Publishing Co., Ltd.,

Box 1014.

Lower President Street, Johannesburg.

'PHONE UP 3232.

Representatives especially set apart to wait upon
Clients on receipt of a Telephone Message.

P.O. BOX 1553.

Telegraphic Address: "AINSCO."

TELEPHONE 356.

HERBERT AINSWORTH,

304-307, THE CORNER HOUSE (THIRD FLOOR), JOHANNESBURG.

CRANE

FOR PRESSURES UP TO
175 LBS.CAN BE PACKED WHEN
OPEN.CAN BE REGROUND
WITHOUT DETACHING.

NAVY

UNION BONNET
REGRINDING
TESTED TO 250 LBS.

VALVES

MADE IN
GLOBE, ANGLE & CHECK PATTERNS.

CONSOLIDATED RAND BRICK, POTTERY AND LIME COMPANY, LIMITED.

P.O. Box 609.

Telegraphic Address: "INDUSTRY."

'Phone No. 1232.

Manufacturers of Pressed Hofman Kiln Bricks, Downdraught Blue Building Bricks, White and Salt Glazed Bricks, Finest Ground Fireclay, and Fireclay Goods of all descriptions.

Sewerage and Irrigation Pipes and Fittings in all sizes.

Fire Bricks, Liners, Crucibles, Fireclay Blocks, etc.

SPECIALITIES:—Pan Furnace Blocks, Drill Furnace Blocks, Loco. Furnace Arches, Baffle Bricks, etc.

Our Pipes, etc., are equal to the best English manufacture, and are largely used by the Public Works Departments, Municipalities, Contractors, the Mines in the Union and also Rhodesia.

Large Stocks of Pipes and Fittings suitable for Agricultural and Stormwater Purposes always on hand.

For samples and particulars apply to Office:—

No. 48, CULLINAN BUILDINGS,
Corner Main and Simmonds Streets, Johannesburg.

THE SOUTH AFRICAN
Mining Journal,
 WITH WHICH IS INCORPORATED
South African Mines, Commerce and Industries.
 ESTABLISHED 1891.

VOL. XXVII., PART I.] NOVEMBER 3, 1917. [No. 1362.

HEAD OFFICE: 176-180, Stock Exchange Buildings, Fox Street (2nd Floor), Johannesburg, Union of South Africa.

Telephone 913. P.O. Boxes 963 and 418.

Cable and Telegraphic Address: "MINING JOURNAL."

AGENTS FOR GREAT BRITAIN: Argus South African Newspapers, Ltd., Byron House, 82-85, Fleet Street, London, E.C.

AMERICA: Gotham Advertising Co., 95, Liberty Street, New York.

ANNUAL SUBSCRIPTION RATES: Oversea, £2; Union of South Africa and Rhodesia, £1 10s.; Local Delivery (Town only), £1 6s.

Copies of this journal are obtainable at all Branches and Agencies of the Central News Agency, Ltd., at all News Agents and Railway Bookstalls throughout South Africa, and at the London Agency as above.

NOTICE.—The postage of this issue of the *S.A. Mining Journal* is: South Africa, 1d. All other parts, 1½d.

| CONTENTS. | PAGE |
|--|------|
| Notes and News ... | 203 |
| Topics of the Week: | |
| The New Government Areas ... | 205 |
| The Case for the Low-Grade Mines ... | 205 |
| The New Government Leases (Illus.) ... | 207 |
| The Year with the Knights Deep ... | 208 |
| Answers to Correspondents ... | 208 |
| The Government Miners' Training Schools—II. ... | 209 |
| Metallurgical Problems of the Rand—VI. ... | 211 |
| Correspondence and Discussion: "A Reminiscence of 1889"; "High Explosives" ... | 212 |
| The Week in the Sharemarket ... | 213 |
| Personal ... | 214 |
| September Company Registrations ... | 215 |
| The Week in the Mining Material and Engineering Trades ... | 217 |
| New Patents ... | 225 |
| Company Meetings: Knights Deep, Ltd.; Victoria Falls and Transvaal Power Co., Ltd. ... | 226 |

Notes and News.

A further and a notable step in the career of Wittome's **Apex Water Blast** was marked last week when, in the presence of the leading consulting and mechanical engineers of the Rand, a demonstration of the water blast was given at Messrs. Fraser & Chalmers' yard. Four water blasts were attached to water and air pipes, each being fitted with nozzles of different sizes. The demonstration was highly successful, though the amount of fogging was, naturally, not so great as it would have been under the different atmospheric conditions underground. A full description of this promising invention will appear in our next issue, with some representative views on its value to the industry.

* * * *

M. D. Levat, the well-known French consulting engineer, who has specialised on oil, has been paying **Madagascar Oil** the Rand a visit, after a professional trip to Madagascar. Despite the failures of the past, M. Levat is still confident that oil will be discovered in payable quantities, and as the result of his recommendations, the Sakalava Madagascar Proprietary Oil-fields, Ltd., are carrying out an active drilling programme with a reorganised staff. Already there are indications that the new programme may be attended by success. The following are copies of cables received by the head office of the company here from the acting manager in Madagascar:—Cable dated 27th September, 1917: "Depth of No. 5 borehole three fifty, gas and show oil at two fifty." Cable dated 23rd October, 1917: "Depth four fifty oil sands, three forty-five to three fifty-three show light oil, oil sands three sixty to three eighty-five with considerable gas. Work progressing." As the report of the annual meeting printed in our columns a few weeks ago showed, the company is now making a bid for success under new and improved auspices.

* * * *

Mr. A. French, vice-president of the Chamber of Mines, speaking at the Commercial Congress

The Future of the Low-Grade Mines. banquet last week, said that the round-table conferences had enabled both employers and men to appreciate and realise each other's position and difficulties much more clearly. While honestly believing that the relations between the men and themselves had improved as the result of recent conferences, he regretted to say there appeared to be a certain number of the men who look upon the agreements arrived at as a sign of weakness on our part, and who seem to think that they can maintain a continuous process of squeezing. Such a course, if persisted in, can only lead to disaster. "We have already gone to lengths that have not been reached in any other country, inasmuch as we have guaranteed a standard minimum wage, both for the present and after the war, to every class of our white workers. We have done all that we can to establish good industrial conditions, and have gone much further than the men themselves anticipated. Therefore, it is now up to them to show by efficient work and less agitation that we were justified in meeting them as we have done. The position of many of the gold mines to-day is most precarious. Several, although showing a small working profit, are actually running at a loss; others are just balancing expenditure and revenue. It only needs a slight addition to working costs in the shape of increased prices of stores and materials, or a little more stringency in the native labour supply, to represent the last straw. If we are to have unreasonable labour agitation, and its attendant inefficiency, on the top of our existing troubles, then the closing down of some mines will come all the sooner." He added that he was sorry to introduce such a serious note into his remarks, but he felt that it was necessary to utter a word of warning, especially as such a contingency as considering restricting the working of the mining industry is one that affected many of his hearers very materially indeed.

Cable information has been received from London to the effect that a general meeting of shareholders of the Daggafontein Gold Mining Co., Ltd., will be held in London on the 19th November, when resolutions for the liquidation of the company will be submitted. Shareholders in South Africa are recommended to send their shares to London for registration. The scrip should be accompanied by the usual transfer form and a remittance to cover registration fees and British *ad valorem* stamp duties.

* * * *

The ordinary general meeting of De Beers Consolidated Mines will be held at Kimberley on 30th November, and will be followed by an extraordinary meeting at which a resolution will be proposed amending the articles of association. Clause i. of Article 84 is to be cancelled and in its place is to be inserted the following: "The directors shall be paid out of the funds of the company by way of remuneration for their services at the rate of £1,000 per annum each, free of income tax, and in addition a sum of £100 per month to each director during his presence in South Africa."

* * * *

A company under the title of the Eastern Van Ryn and Modderfontein Gold Reefs, Ltd., was registered in London on September 7 with a capital of £1,000, in £1 shares.

Eastern Van Ryn and Modder Gold Reefs. The objects are: To search for, prospect, examine and explore mines, mining claims and ground supposed to contain gold or other minerals or oil, etc., and an agreement has been entered into between Hans Sauer of the one part and E. Hallam (for the company) of the other part. The purchase consideration "has been fixed by H. Sauer as the amount he is willing to take having regard to the fact that the claims agreed to be sold are of uncertain value. The directors are absolved from any liability in regard to such value, and every shareholder, present or future, will be deemed to have had notice of the provisions of the said agreement and to have assented thereto, and to hold his share on that footing." The minimum cash subscription is 7 shares. No persons had consented to act as directors to 7th September. The solicitors are George Reader & Co., 35 Coleman Street, E.C.

* * * *

Dealing with the machinery trade after the war, a London contemporary says: "Notwithstanding the release of a large number of factories now engaged upon war munitions as soon as peace has been

proclaimed, there is some doubt about the ability to replace in anything like sufficient quantity or time the immense amount of machinery that will be required. During the last two years it has been difficult to obtain from European manufacturers new machinery of any kind, while, since the United States came into the conflict, the same lack of ability to fulfil South American orders has been manifest from this direction. Important repairs have had to be postponed, and an enormous quantity of existing machinery will have to be 'scrapped' and replaced by entirely new installations. A leaf might well be taken, by our larger manufacturers of machinery and equipment, out of the book of our keen rivals, the North Americans, who, in order to grapple with the unprecedented demand after the war, have already formed among themselves what is known as the 'Allied Machinery Construction Corporation,' which represents a group of leading, but non-competing, manufacturers of construction machinery, and who, taken together, produce all of the main types of such equipment. The group, however, excludes concrete mixing and distributing plants, steam and other power shovels and excavating machines, trench and ditch-digging machines, grab buckets, hoisting engines, light railway lines, light locomotives, and cars of all types, and a great variety of similar special equipment. We have something of the kind already in the machine tool trade, and further developments would undoubtedly prove beneficial."

The following appears in the London *Times* of September 25:—A new trade for disabled soldiers has

Diamond Cutting been started by means of technical training at Brighton. classes in diamond cutting and polishing

at Brighton. The training is being given to legless men sent from Roehampton, and may be extended later to one-eyed men. Mr. Bernard Oppenheimer, the diamond merchant, who originated the scheme, discussed the future of diamond cutting as a trade for disabled men with a representative of the *Times* recently. He said:

"Ninety per cent. of rough diamonds come from the British Colonies, and formerly they were cut and polished in Belgium, Holland and Germany. There were 2,000 men employed in this trade in the German Empire alone. We are not trying to take trade from Belgium, our Ally, or from Holland, but as far as Germany is concerned we are anxious to secure the work that was done there, and that is why we are teaching legless men diamond cutting and polishing. It is not a difficult trade, and within three months of starting it will be quite possible for a man to earn at least from £2 to £3 per week. The De Beers Company, who are the biggest diamond producers, have given us £2,500 towards the school, and I and my friends have put £20,000 into it. By the end of the year we hope to have at least 200 men ready to work. Mr. Hodge, the Pensions Minister, came down on Friday last to go into the scheme. He was very pleased with what he saw, and was presented with the first diamond polished at the school. I have bought a site for the first factory, where I shall employ 350 to 500 men, and I hope other merchants will follow suit. The more competition and the more factories started, the better. There is no limit to the number we may train. There may have to be some weeding out, but so far the most unlikely men are proving the best. Many small cutting factories have been started in London by the Belgians since the war. It is a new industry, and it is one very suited to legless men. Later we may be able to take men who have lost the sight of one eye, as only one is required for examining the diamonds."

* * * *

In dealing with surveys of the fields for research, the Imperial Committee for Industrial and

Industry and Research. Technical Research says:—Besides the initiation and direct conduct of researches

which from their nature are unsuitable for private enterprise and unlikely to be undertaken on a co-operative basis, we recognise that it will be a permanent and important part of our duties to arrange for surveys to be made of existing scientific knowledge and the fields for research in particular industries. Systematic surveys of this kind are needed in many directions, and we are arranging for their production as rapidly as circumstances will permit. We have already referred to the survey of the field of research in coal which was prepared for our own use before the establishment of the Fuel Research Board. We have had similar surveys prepared on other subjects engaging our attention with a view to future action. Some of these have been or will be published. Among the former is a Report on the Resources and Production of Iron and other Metalliferous Ores, prepared by Mr. G. C. Lloyd, secretary to the Iron and Steel Institute, the first edition of which is already nearly exhausted. The document was prepared on the advice of the Ferrous Section of our Standing Committee on Metallurgy. A Sub-Committee of the Section was unanimously of the opinion that a statistical survey of the supply of raw material for the iron and steel industry should be put in hand as soon as possible, and should be carried on with expedition as a necessary preliminary to research into the constitution of newly discovered materials and the best methods of using them. It is not pretended that this first rapid compilation can be complete or free from error in its earlier editions, but we hope that as corrections and additions are made, it may gradually reach in its later issues a high degree of accuracy. The new edition now in preparation will include a number of corrections and alterations, as well as the available information regarding the metalliferous ores of those countries which were omitted from the first issue.

TOPICS OF THE WEEK.

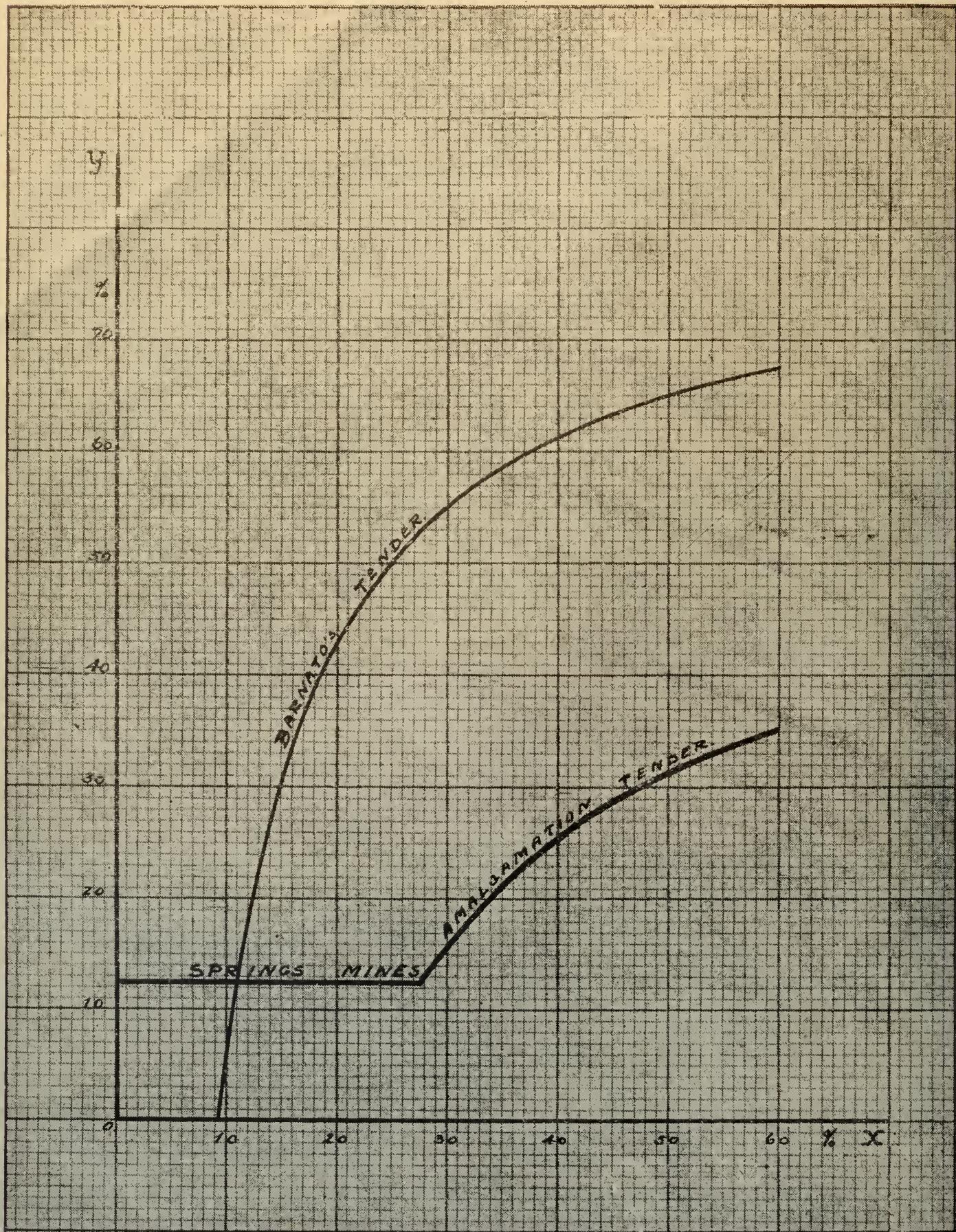
THE NEW GOVERNMENT AREAS.

THE announcements by the Government this week in regard to the successful tenders for the four Far East Rand areas are excellent as far as they go. Naturally, there is some disappointment over the fact that the Government has allowed to slip this unique opportunity for securing the capital necessary for working all four areas when it seemed so "willing." It must not be forgotten, however, that in the original advertisement it was stated that tenders for the four areas would be opened on October 2 and on the same day three months later, *i.e.*, on January 2 next, unless notice was given to the contrary. It is possibly the intention of the Government, therefore, that the unsuccessful tenderers for the two areas still unleased have until January 2 to put in better offers, which may possibly commend themselves to the Government. It seems fairly obvious that the excellent offer made by Messrs. Barnato for the Springs-Geduld South area had something to do with whetting the desire of the Government for better terms for the two unallotted areas. The Barnato offer is certainly a most generous one; and shows the absurdity of the proposals that the State should itself bother to mine any portion of the Far East. Varying, of course, with the ratio of profit to recovery, which we have at present no means of estimating, the share of the profits offered by Barnato to the Government is anything from 60 to 70 per cent., including taxation. No competing tender can have come anywhere near this liberal offer, and the Government could, of course, not refuse so tempting a share. The area is, in some quarters, regarded as an especially favoured one, and Messrs. Barnato's technical advice has proved itself so sound in the past that we cannot doubt that either party to the deal will have any cause to regret it. The South Geduld forms a compact block between some of the most successful producers of the Far East, and it will be a notable and welcome addition to the great mines of the district. The Springs people appear to have tendered for both the De Rietfontein areas, and are to be congratulated on securing the one on the dip of their mine on highly favourable terms to both parties. With the addition of the new area, the Super-Springs will have an extent of 3,567 claims, making it quite the largest producing mine on the fields, and situated in the area most full of promise. For five years it will pay 5 per cent. of its profits for the new area, and thereafter a share of profits not less than 12½ per cent., and varying upwards with the ratio of profit to recovery. We have no hesitation in describing this as an excellent arrangement for both Government and company. The terms of the leases under varying conditions are illustrated by the diagram reproduced elsewhere in this issue. From this the Springs people seem to have made a particularly good bargain, though it should not be forgotten that the share of profits shown in their case differs from that of the Barnato lease inasmuch as it includes an existing producing mine. There is reason to believe that the property now leased by Springs is richer than generally believed. The rich shoots of the present Springs mine all tend towards the southern boundary, and development has been extended, with excellent results, down to the boundary of the ground now acquired. Moreover, all the indications go to show that the depth of the reef in the Southern Springs area is much less than popularly supposed, and drawn on such recent maps as that of Mr. Kotzé. Where not actually tilted upward, the reef seems flat in the lowest workings of the present Springs Mynpacht mine. It is an interesting fact, reflecting very favourably on the confidence in the district, that, even allowing for tenders that did not contemplate raising capital for new companies, but merely enough to increase that of existing companies, the capital involved in the offers received exceeded twenty millions sterling. Of that sum but a tithe will be absorbed by the capital required for the two areas now given out. The obvious moral is that the remainder of the dormant areas of the Far East should be offered to tender as soon as possible, and that the Mining Leases Bill now unaccountably "hung up" should be given precedence of all other business in the forthcoming Parliamentary session.

THE CASE FOR THE LOW-GRADE MINES

SELDOM has the case for the low-grade mines of the Rand been better put than by Mr. Christopherson at the Knights Deep meeting this week. A full report of the chairman's speech will be found in another part of this issue, and it is to be hoped that the warning therein conveyed will have the widest possible publicity. If working costs continue to rise, Mr. Christopherson plainly showed that the low-grade producing mines will become unprofitable, and we cannot improve on his summary of what that would mean. He said that the effect of shutting down such mines would be:—
 "(a) Not only loss to shareholders, especially in view of the large amount it would cost to reopen these mines, but very serious, and even disastrous, results to the Rand in particular, and to South Africa in general, as such low grade mines as the Knights Deep are, from the point of view of their expenditure in wages, stores, etc., of as equally great value to the country as rich mines. (b) The discharge of several thousand white employees, which in turn, since it is calculated that each worker supports, directly and indirectly, about eight other white persons on the Rand, will involve a loss of livelihood of about one-fourth of the Rand population. Such an economic and social crisis is therefore liable to be of a very serious nature. (c) The loss of the very large market for mining supplies and produce from all parts of South Africa which these large low-grade mines at present afford. (d) The total loss to Government of the taxation, chiefly indirect through Customs and railways which these mines are contributing through various channels, including that of a proportion of the wages paid to employees. (e) The cessation of the production of gold as an Imperial requirement under existing conditions, although this might possibly be offset to some extent by increased production on higher grade mines. (f) The transfer of the natives employed with a limited amount of the white labour to richer mines, which individually would benefit." As indirect taxation was practically in proportion to the tonnage milled it must obviously be, relatively speaking, a far heavier burden on the lower grade mines, where profitable working is dependent on milling large tonnages rather than on higher grade mines. In other words, those mines which return shareholders least pay most per ounce of gold recovered in taxes to the State, instead of the reverse which should be the case. He quoted concrete examples in support of the fact that a poor mine pays wages and indirect taxation, and consumes supplies and maintains its workers in the same way as does a rich property in proportion to its scale of operations. Mr. Christopherson put the matter in a nutshell by saying:—"If the serious results, which now face a quarter of the working mines on the Rand, including your company, are to be avoided, it is essential that some relief be found in the way of lightening the unduly burdensome indirect taxation which presses so heavily upon them as to threaten their total extinction as taxpayers, as employers of labour, and as purchasers of South African mining supplies and produce." That the industry has not already been seriously curtailed is plainly due to careful management, and Mr. Christopherson in his concluding passage showed that there was not going to be any relaxation of efforts in that direction. "I can assure you," he declared, "that although the position of the Knights Deep is causing anxiety owing to the low grade of ore we have to deal with, being especially burdened by war conditions and indirect taxation, those responsible for the working of the mine are making, and will continue to make, every endeavour to carry on operations at a profit. If all our efforts prove unsuccessful, then, from what I have already stated, you yourselves will realise that the position will be serious not only to shareholders and to our employees, but also to the community. It is therefore to be earnestly hoped that the Government will consider ways and means whereby some relief may be given to low-grade mines, at any rate during the period of the war and for such time thereafter as war conditions may continue to operate." We hope and trust that every member of the Union Assembly will be furnished with a copy of Mr. Christopherson's speech, and that the next session will prove that Parliament has been awakened to the seriousness of the position.

BARNATO AND SPRINGS MINES GOVERNMENT LEASES.



THE SUCCESSFUL TENDERS FOR THE SOUTH GEDULD-SPRINGS AND DE RIETFONTEIN EAST AREAS.

The above curves show how the values of x (percentage of profit to recovery) affect " y "—the Government share of the profits. To them must in each case be added Government taxation, which is a varying percentage according to the share accruing to Government under the sliding scale.

THE NEW GOVERNMENT LEASES.

Some Particulars of the Terms—Formulae Explained and Illustrated—Big Future for the Greater Springs—Barnato's Liberal Offer.

THE Government announces that the tenders for the recently advertised areas on the Far East Rand and for the Treasury Mine were as follows:—

For the SPRINGS-SOUTH GEDULD AREA:—Anglo-American Corporation of South Africa, Ltd., Barnato Brothers, Central Mining and Investment Corporation, Ltd., Geduld Proprietary Mines, Ltd., General Mining and Finance Corporation, Ltd., and Isaac Lewis.

The Government has provisionally accepted the tender of Barnato Brothers. Their offer is for the formation of a separate company, with an initial capital of £1,500,000. All the shares will be taken up at once, 250,000 fully paid up, and on the remainder 2s. will be paid up at once and the balance called up when required. The tenderer takes a commission of 5 per cent. The consideration payable to the Government in addition to taxation is a percentage of profits calculated on a sliding scale according to the formula

$$80 - \frac{750}{x}$$

For DE RIETFONTEIN EAST.—Barnato Brothers, J. Dale
Lace, Isaac Lewis, Springs Mines, Ltd.

The Government has provisionally accepted the tender of Springs Mines, Ltd., on the basis of an amalgamation with its own property. The capital of the company will be increased from £1,000,000 to £1,500,000. The consideration payable to the Government, in addition to taxation is 5 per cent. of the profits of the amalgamated property for the first five years and thereafter a percentage calculated on sliding scale according to the formula

55 —

with a minimum of twelve and a half per cent.

For DE RIETFONTEIN WEST:—Central Mining and Investment Corporation, Ltd., J. Dale Lace, Isaac Lewis, Springs Mines, Ltd.

The Government has decided not to accept any of these tenders.

For GEDULD EAST:—Isaac Lewis.

The Government has decided not to accept this tender.

For the TREASURY MINE:—Andrew McNally, Craigie Mines, Ltd., Humphreys, Cassell and Luitjeström, Ludlam and Durcs, Richards.

The Government has provisionally accepted the tender of the Craigie Mines, Ltd., for an amalgamation of the area to be leased with the property of the company. The consideration payable to the Government in respect of the joint property in addition to taxation is a percentage of the profits calculated on a sliding scale according to the formula

46 — 960
x

with a minimum of twelve and a half per cent.

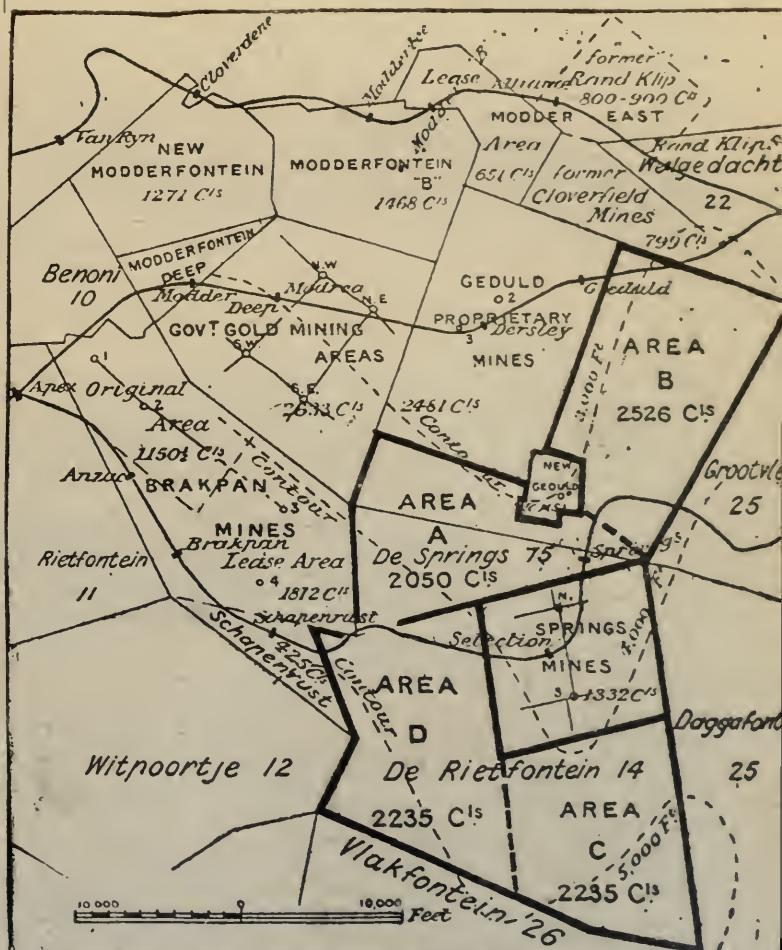
THE BARNATO OFFER.

The Barnato offer is easily the best that has ever been made by a reputable firm for any of the Far East areas. As the curve on the accompanying diagram shows, it means that the Government will secure a very high percentage of the profits, apart from the ordinary taxation. If " x ," the percentage of profit to recovery is, say, 50, then the Government will receive no less than 65 per cent. of the profit in addition to the ordinary taxation. After allowing for amortization, and normal and dividend tax the result will mean a very handsome contribution to the Government.

THE SPRINGS LEASE.

On the accompanying diagram is also plotted the curve of the Government's share of the profits in the case of the

Springs lease. In this case also taxation must be added. Assuming x , the ratio of profit to recovery, to be again 50 per cent., the share of the Government works out at 31.5 exclusive of taxation. A contemporary makes the mistake of assuming that the 5 per cent. of the profits payable to the Government during the first five years is to be added to the above figure. To the latter, of course, only Government taxation, less allowance for amortization has to be added. The same contemporary also erroneously assumes that an additional sum of £500,000 is to be provided to the company by the "C.M.S." and Rand Selection Company. The gradual issue of 500,000 new shares will obviously realise far more than half a million sterling under the improved conditions, and the amount thus available to the company for development and increase of plant will be much more substantial. Moreover, it goes without saying that the Springs people have been in a unique position to estimate the value of the ground they have now leased as well as the remainder of the ground in their vicinity. Their workings have been continued to the boundaries of the new area,



AREAS "A" AND "C" GIVEN OUT—"B" AND "D" WITHHELD.

The above contour lines are taken from estimates in Mr. Kotze's map of the Far East. They have been considerably extended to the south by the latest data. Indications, as a fact, would seem to show that the lowest point of the Far East Rand basin is not far from the Springs Mynpacht southern boundary, as the reef below that point would seem to be flat, if not actually tilting upwards.

and no one is in a better position to judge its potential value than they are. We believe it is safe to say that the development in the southern section of the present Springs mine is the best in the mine, and that the rich ore shoots of the property all tend towards the area now acquired. In regard to the depth of reef factor, likewise, the position is much more favourable than generally believed. Mr. Kotzé's map, from which the accompanying sketch has been taken shows the four thousand feet contour line traversing the southern boundary of the present Springs Mynpacht mine. This is

not borne out by the latest data, which, as a fact, go to show that the reef is almost flat with a slight upward turn, which may or may not mark the deepest point of the Far East Rand basin. The bearing of these facts and possibilities on the future of the greater Springs—now the largest gold mine of the Rand—need not be emphasised. Further reference to their broad significance is made in our leading columns, and the map and accompanying diagram should answer most of the questions arising out of the latest Government areas to be leased.

THE YEAR WITH THE KNIGHTS DEEP.

THE report of the consulting engineer, Mr. C. D. Leslie, on the Knights Deep, for the year ended July 31, is as follows:—The tonnage milled during the year was lower by 110,800 tons than that of the previous year. The revenue per ton declared was 4·884d. lower, and working costs were 1s. 0·758d. per ton higher than the figures for the preceding year, so that the declared profit on working was reduced by £104,728 17s. 6d., or 1s. 5·642d. per ton milled. The working profit of £93,214 1s. is inclusive of 2,186 ozs. fine gold, valued at £9,108 6s. 8d., which were taken from reserve. As anticipated in last year's report, working expenditure has increased, but the low cost for the year of 1s. 3·080d. per ton milled, and the relatively small rise, as compared with the year preceding the war, of 1s. 1·488d. per ton milled, indicate very economical working, for which the mine management deserves great credit. The effects of shortage of natives and of skilled miners, as well as the rising cost of supplies, have been felt very severely on your low grade mine, which is dependent for its normally small margin of profit upon a high tonnage and low operating

costs. The position, especially during the latter half of the year, was affected unfavourably by a decline in grade of the ore milled, in which it is hoped that some improvement can be made to relieve the anxiety which must be felt until normal conditions of working are restored. Good results are expected from sand filling which was started in the Connor shaft section in October, 1916. The ore reserve, fully developed at 31st July, 1917, is estimated at 2,301,000 mine tons of an average value of 4·4 dwts., being a decrease of 313,000 mine tons compared with the previous year. The partially developed ore is estimated at 37,000 mine tons of an indicated value of 4·32 dwts. In addition, there is a large reclamation tonnage which cannot be included in the ore reserve on account of insufficient information for valuation. I desire to record my appreciation of the strenuous efforts being made by your manager and the members of his staff to continue profitable working under the difficult conditions referred to.

A full report of the chairman's speech at the annual meeting will be found elsewhere in this issue.

Artificial Diamonds: Further Experiments.

For some years (remarks *Engineering*, in its latest issue to hand) nothing seems to have been written on artificial diamonds, and the practically negative results of the new experiments of Professor Ruff, extending over three years, will hardly induce others to take up this study. The systematic research of Ruff ("Zeitschrift für Anorganische Chemie," vol. ic., pages 73 to 105, May 15, 1917) was undertaken with the object of testing all the reactions likely to lead to a deposition of carbon, and he tried in particular, also, whether small real diamonds would grow under his experimental conditions. To bar the possibility of mistakes, in view of the fact that any resulting growth would probably be minute, he purified these diamonds first with hydrofluoric, nitric and sulphuric acids, potassium nitrate, and, finally with chlorine at 1,000 deg. C. He confirmed the statement of previous experimenters that small crystals of carbon and alumina, even of quartz, had apparently been mistaken for diamonds, and his own artificial crystals, which fluoresced like diamonds in ultraviolet light and under α -radiation, were too small to admit of any conclusive analysis. In the first series of experiments he submitted gases (coal gas, acetylene, carbon tetrachloride, carbon monoxide, methane, etc.), alone or mixed with vapours (iodoform, benzene, carbon disulphide, etc.), to temperatures ranging from 200 deg. C. up to 3,000 deg. for 14 days, without obtaining more than an amorphous or graphite growth, except in one case. The carbon electrode arc of 5,000 volts alternating and 0.5 ampere, burning in liquid air for a very short time, yielded some very small crystals; arcs burning in flowing water and singing arcs did not give any distinct result, though the hard mass forming at sharp points left no residue when burnt. Experiments with liquids, heated up to 30 days, of paraffin, wax, graphitic acid, pitch, diphenylaniline, etc., to which sometimes various metals (mercury, silver, silicon, aluminium, sodium, etc.) were added, were resultless. Quenching fused metals saturated with carbon at 1,350 deg. C. iron alone or alloyed with high percentages of silicon, titanium, vanadium, tungsten; also cobalt, nickel or manganese yielded very small diamonds, such as Moissan obtained; but an alloy of low melting-point (850 deg. C.), consisting of 100 parts by weight of iron, 100 parts of antimony, and 60 parts to 75 parts of manganese, yielded nothing, not even when a small diamond was embedded in the alloy, which was heated in a carbon arc. Fused silicates, etc., were no good either as solvents for carbon; this is particularly interesting, because Ruff especially tried silicates of the

composition of the blue ground of Kimberley, in which diamonds occur. Nor did Ruff obtain any diamond-like crystals by electrolysing at 2,200 deg. fused calcium carbide, with which method Boismenu claimed to have been successful a few years ago. Finally, Ruff made experiments with a steel bomb similar to that which Johnston and Adams had used in 1911 at Washington, and hydraulic pressures of 3,000 atmospheres to heat liquids (oils, etc.) and gases (CO) for days, and to produce a carbon arc in gas or in water. A carbon rod of 1.5 mm. diameter, heated in water by currents of 35 amperes at 80 volts, burned through in five seconds, but the drop of fused carbon merely solidified to a hard graphite. The war, in which Ruff's collaborator, Dr. Lauk, was killed at an early date, interrupted the experiments, which are not likely to be resumed.

ANSWERS TO CORRESPONDENTS

All enquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to enquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.

"Cobble" (Malmesbury).—Yes, a good lock-up, which should appreciate in capital value early in the New Year.

"N. D. D." (Molteno).—(1) Not dealt in here—only in London. (2) No, the mine is all right.

"G. W."—(1) Yes. (2) 5 per cent.

"Perturbed" (P.E.).—(1) About the same. (2) Will doubtless improve. (3) Yes—hold. (4) Yes—5 per cent. (5) Cannot explain market vagaries.

"M. O. & Co."—Information duly wired.

THE GOVERNMENT MINERS' TRAINING SCHOOLS.—II.

Conditions.—The following are the conditions under which apprentices are admitted by the Board of Control:—
 (1) Youths selected to undergo a general course of underground training for a mining career shall be of first-class physique, and shall pass a rigorous medical examination.
 (2) Applicants will be accepted as apprentices between the ages of 16 years and 25 years (both inclusive). Preference, however, will be given to applicants who otherwise fulfil the conditions by the Board having the best education and qualifications. The applications of persons exceeding the age of 25 years will be considered on their merits by the Board.
 (3) An agreement with the Board of Control binding him to work for a period of two years underground in consideration of his training and a progressive wage shall be entered into on behalf of the apprentice. And further, the apprentice shall undertake at the end of the period of indenture to work for a period of six months on a mine to be selected by the Board of Control at a fixed rate of day's pay not less than 16s. 8d. per shift, if the apprentice is under the age of 21 years, or, so soon as he attains the age of 21 years, at the rate prevailing on such mine, but in any case at a rate not less than 16s. 8d. per shift.
 (4) The two years' course shall comprise, amongst other matters, training in the following underground work:—Stoping, developing, timber work, pipe and plate laying, hand-drilling, machine-drilling, general mine work, first-aid. The time to be occupied on each of the above branches of work, and the order in which each branch is to be taken up, shall be in the discretion of the Principal. It will be remembered that a special advantage of the increase in the number of schools for the training of miners is that apprentices will be able to gain experience of the different mining conditions that exist on the mines of the Witwatersrand.
 (5) At the expiration of his period of underground apprenticeship, the apprentice shall be given a certificate stating that he has served his apprenticeship on one or more mines.
Health and Character.—Satisfactory certificates of health and character must be furnished before an apprentice can be accepted.
Surety.—A sum of ten pounds, by way of surety, only to be forfeited in the event of an apprentice failing to complete the term of his indentures without good reason, must be found.
Rate of Pay.—The rate of pay progresses on the following scale:—First six months, 4s. 3d. per day; next six months, 4s. 6d. per day; next six months, 4s. 9d. per day; next six months, 5s. per day.
Note: It will be remembered that at the completion of his two years' apprenticeship the apprentice will receive preference over all other candidates for employment on the mines, and six months' employment will be guaranteed him at the rate prevailing on the mines (if the apprentice has attained the age of 21 years), but in any case at a rate not less than 16s. 8d. per shift.
Bonus.—In addition there is a scale of bonuses which enables the industrious apprentice to add materially to his wage.
Deductions.—The following deductions are made per month:—Board and quarters, £3 5s.; medical and benefit society, 7s.; recreation fund, 1s.; total deductions, £3 13s.
Financial Position.—Thus the financial position of an apprentice at the end of, say, his second month (of course supposing that he works satisfactorily) would be:—26 days' wage at 4s. 3d., £5 10s. 6d.; bonus (say), £1 10s.; total earnings, £7 0s. 6d.; total expenses, £3 13s.; balance for pocket money, £3 7s. 6d.
Surplus Earnings.—As time goes on, the apprentice's earnings increase, but his expenses remain stationary.
Health.—Particular attention is paid to health. The health of the apprentices at the Wolhuter School has always been good, and thorough examinations by medical men, recognised as authorities on the disease, have failed to detect silicosis (miners' phthisis). This fact is very encouraging, as showing that, with the present satisfactory health conditions underground, and good, clean living on the surface, this disease need not be feared. One

of the principal reasons for selecting the site of the new Bantjes School was its healthy situation and its detached position in relation to undesirable influences. These considerations will also greatly influence the Board in selecting the sites of the other schools.
Annual Leave.—One month's leave of absence is granted annually on half-pay, and must be taken for the purpose of providing a proper rest. It should, if possible, be spent at the coast. The period of apprenticeship at the Schools will count as qualifying for leave at the mine to which the apprentice may be drafted, that is, after completing one year's service with the company, he will become entitled to 24 working days' leave on full pay, with a maximum of 20s. per shift instead of the 12 working days' leave granted to underground mine employees on completing one year's service.
Medical Attendance.—Medical attendance is provided at all times, and in case of illness or accident the patient is removed to the hospital, all expenses being covered by the monthly contribution to the Medical Benefit Society.
Evening Classes.—Evening classes are held, attendance being compulsory; the subjects taught are connected with practical mining.
Mining Certificates.—Apprentices who wish to attend the evening classes at the South African School of Mines and Technology will be given permission to do so at the discretion of the Principal, and those who obtain the training school certificate are excused from one of the four years' or five years' underground experience necessary for the mine overseer's or mine manager's certificate respectively before they can go up for examination.
First-Aid Classes.—A course of lectures on "first-aid" is given under the auspices of the South African Red Cross Society, and every apprentice must qualify.
Catering.—The boarding-house is in the charge of an experienced caterer, both as regards quality and quantity.
Examination for Official Certificate.—Upon the satisfactory completion of his two years' indentures the apprentice is subjected to a thorough practical examination, and, if successful, he is granted an official certificate.
Mine Managers' Testimony to the Wolhuter School.—The following extract from the report of the manager of the Nourse Mines, after his examination of the first six apprentices who completed their indentures, testifies to the value of the training received at the School:—"I would like to state that, in our opinion, the knowledge of the six students, as a class, is exceedingly good. They appear to be thoroughly well grounded in the general work and can give reasons in most cases for their opinions. They are particularly strong in safety measures and in health precautions, and should, with a little more experience, which they are now well fitted to acquire under ordinary working conditions, become real assets to the mining industry." Mr. J. J. Wessels, the manager of the Robinson Deep, Ltd., writes:—"With reference to the two apprentices who started work here after completing a full course at your school, I beg to inform you that they have proved themselves thoroughly capable and efficient in all branches of underground work. Their discipline and conduct are exemplary. I would like to state that there is room for a large number of such men on this mine." Mr. C. Glyn, the manager of the City and Suburban Gold Mining and Estate Co., Ltd., writes:—"During the last few years several apprentices from the Wolhuter Training School have been employed on this mine doing various kinds of underground work. The majority of these youths have been good workers, and have been keen on learning their work. There is no doubt that the training they obtain at the school is a good one, and after the course they prove themselves vastly superior to the learners trained on the mines, and can compete with the best miners obtainable. The opening of further schools will be of great benefit to young men anxious to take up a mining career."
Results to Date.—Apprentices who have completed their indentures and received certificates have all obtained work at once on the mines, none of them at a less wage than 16s. 8d. per shift. Most of them are now getting 20s. and 22s. 6d. As their average age is not more than 23 years, these results must be considered most satisfactory. Several ex-apprentices are

already in the position of shift bosses. *South Africans in Mining Industry.*—A large and increasing number of South African-born men are taking up mining as a trade. It is to be remembered, however, that mining is a skilled trade. It is to be feared that, owing to a lack of proper training, a great number will always remain semi-skilled workmen and will never command the excellent wages offered by the mining companies to first-rate miners. On the other hand, men who are willing to give the time and take the trouble necessary to learn this trade properly can always obtain remunerative employment and intelligently guard themselves against miners' plthysis. *Action by Government.*—

Under the Enemy Trading Act in the Supreme Court last week, in the case of the Treasury v. the New Modderfontein G.M. Co., Ltd., an application was made to Mr. Justice Curlewis, in Chambers, for an order vesting in the Custodian certain 58,000 shares in the company, owned by enemies. Mr. Stratford, K.C., for the respondents, said that the company desired to take up a cautious attitude, and considered itself justified in putting before the Court the contention that the words in the order sought, "together with all rights and privileges arising from, and incidental to, the ownership thereof," covered powers which the Court ought not to grant, even if it had jurisdiction, and urged that the powers granted should be confined to those specifically required, and not be of a general nature, and in the wide form suggested. It was pointed out that an order in the form asked for would entitle the Custodian to vote at the meetings of the company, and that such power ought not to be granted unless on cause shown and the special authority of the Court. His Lordship remarked that circumstances might arise in which it would be desirable for the Custodian to exercise such right. Dr. Bok, for the applicant, explained that the practice of asking for orders in the form required arose from the fact that in one of the first applications made under the Act, the Treasury v. the United Engineering Co., special powers were asked to receive the dividends, to vote at the meetings, etc., and the suggestion was then made by the Court that it would be more practical if general powers of ownership were asked for. The practice had since been followed in the Transvaal and elsewhere, and had never been challenged, and was the correct form in which the order should be made. It was further contended that applications under the Act were really ex parte. The respondents had no *locus standi*, and were in the position merely of garnishees. The real respondents were the enemy shareholders, and no one could object to the applicants' methods of dealing with the shares. Mr. Stratford, in reply, contended that the fact that the respondents had to obey the order gave them the right to appear. The powers sought to be obtained might never be wanted, and only those specifically asked for should rightly be granted. After hearing arguments, his Lordship held that it was desirable that the order should be given in the form asked for. It could not be conceived that there were any rights or privileges which would not be covered by the words of the statute, "selling, managing, or otherwise dealing with the shares." It was not desirable that the owners should be put to the expense of coming to the Court on every contingency. The order was granted as prayed, subject to the condition that any sale of shares be subject to confirmation by the Court. Similar orders were granted with regard to the Cloverfield Mines, the Potchefstroom Exploration G.M. and Estate Co., the Sack Estates and Mining Co., the Modder Deep Levels, Ltd., and the Princess Estate and G.M. Co. Mr. Langerman, on behalf of the Modder Deep and the Princess Estate Companies (forming part of the Goerz Group), advanced similar arguments to those put forward by Mr. Stratford.

Gold Fields Rhodesian.

The Gold Fields Rhodesian Development Company announces that the audited accounts for the fourteen months to May 31 last show an available balance of £96,630. The directors recommend a dividend of 6d. per share (of 10s.), less tax at 5s. in the £, amounting to £62,855, leaving £33,774 to carry forward.

Companies' Change of Address.

5029 Laher, Ltd., 60, Main Reef Road, Denver, Johannesburg.
 3236 Louis Moore Proprietary Mines, Ltd., 94, Stock Exchange Buildings, Johannesburg.
 5181 Union Corundum Mines, Ltd., Realty Trust Buildings, Simmonds Street, Johannesburg.
 4917 Small Holdings Co., Ltd., 52/3, Standard Bank Chambers, Commissioner Street, Johannesburg.
 3660 Ripon, Ltd., 407 and 408, Consolidated Building, corner Fox and Harrison Streets, Johannesburg.
 3467 Fraser & Chalmers, Ltd., c/o W. H. Haig, Farrar Buildings, Simmonds Street, Johannesburg.

In establishing these schools the Government has provided a course of training, the benefit of which, provided full advantage is taken of the opportunity offered, equips the apprentice with the knowledge of a trade and the experience necessary to enable him to earn high wages, after only two years of training and at no cost to himself. It remains for the youth of the country, and especially parents, to avail themselves of their opportunity. *Applications for Admission.*—Applications for vacancies and for further information should be addressed to the Superintendent, Government Miners' Training Schools, P.O. Box 809, Johannesburg.

New Patents.

529. Marshall Burns Lloyd.—Improvements in and relating to the manufacture of reed articles.
 530. Lugi Dosi.—Automatic pneumatic tube puncture sealer.
 531. Thomas Joynes Jorgensen.—Improvements in rock drills.
 532. Robert Harbottle and Sigurd Sivertson.—A new tanning and dyeing material and process of obtaining same.
 533. Lancelot Ussher.—Improvements in or relating to candle lamps, candle saving devices and the like.
 534. Lancelot Ussher, Armour Hall and Richard Rundle Perkin.—Improvements in pipe and tube manifolds and single valve connections and the like.
 535. Alfred Bartholomew Edwin Batten.—Improvements in joints for connecting bars or rails to posts or pillars for use in the construction of cots, bedsteads and other furniture.
 536. Barend Jacobus Smit and Bernard de Coligny Marchand.—A process for the treatment of native rock phosphates.
 537. George Edward Anderson.—Improvements in rope lubricating devices.
 538. Raymond Wells.—Method of extracting oils and the like.
 539. Thomas Stathert McLaren.—Bomb and tranches.
 540. William James Bettett.—A new or improved distemper.
 541. Robert Ferguson McDougall, William Begbie and Robert David Mackintosh.—Improvements in means or apparatus for turning moulds in boxes, cores and for other similar purposes.



Pittsburgh Steel Company
Pittsburgh, Pennsylvania, U.S.A.

Manufacturers of
"PITTSBURGH PERFECT"

Open Hearth Steel Products

INCLUDING

Galvanized Wire Bright Nail Wire
 Annealed Wire Bright Hard Wire
 Varnished Wire Bright Soft Wire
 Bolt and Rivet Wire
 Galvanized Barbed Wire
 Wire Nails Fence Staples

Pig Iron, Blooms, Billets, Wire Rods, Hard Spring Coil Wire, Twisted Cable Wire, Telephone Wire, Bale Ties, Steel Hoops, Steel Bands, Cotton Ties and Fabricated Stock, Poultry and Lawn Fencing.

We are prepared to give PROMPT SERVICE, and solicit your inquiries accompanied by complete specifications.

Address

PITTSBURGH STEEL COMPANY
 EXPORT DEPARTMENT
 EQUITABLE BUILDING
 NEW YORK, U.S.A.
 Cable Address: "PITSTEEL"

METALLURGICAL PROBLEMS OF THE RAND.—VI.

[By H. FOSTER BAIN.]*

DECANTATION.

Decantation is another process that has achieved unusual prominence on the Rand. To the visitor it is one of the most impressive features of local practice. To settle slime to a 40 per cent. moisture content, in great quantity and within the time limits that may be allowed in practice, is an achievement indeed, and however much one may go to the Rand prejudiced against a discontinuous process of this type, he is bound to return with the feeling that there is much to be said in its favour. In other regions the whole trend is toward continuous processes made as automatic as possible, and it may be noted that in the plans for the new Modderfontein mill the slime treatment will be along this line, with Dorr thickeners such as are used so generally in Canada, the United States, and Mexico. In this connection it may be pointed out that even in a country of low-priced labour, metallurgical results and costs seem to gain by substituting machinery for men where possible. The mills on the Rand that treat the lowest grade of ore, and at the most favourable cost, are the very ones where the fewest men are seen. Supplementing decantation by vacuum filtration is now recognised as standard practice for new plants. Filters have been added to a number of old ones. While the additional recovery has not shown as high a profit as was anticipated, there is still sufficient profit to justify the added investment. It should be remembered that a final tailing worth only 0·25 dwt.—and that is what Rand metallurgists work toward—does not leave much margin. An actual recovery of 95 to 96 per cent. on ore of the grade treated on the Rand must be conceded to be satisfactory. Precipitation is still done by means of zinc-shaving. The pros and cons of zinc-dust precipitation, which has so generally replaced zinc-boxes elsewhere, have been stated in detail by Bosqui. It may be pointed out that the choice of method on the Rand is not wholly governed by technical conditions, though the weakness of the solutions is a factor. So long as it is a settled policy to show the same clean-up per month without very close regard to the grade of the ore milled, it is a matter of great convenience to have in the hundreds of zinc-boxes a reservoir that may be used as a regulator.

COST OF SUPPLIES.

The Rand, owing to its distance from manufacturing centres, is a district in which cost of supplies is unavoidably high. The total amount expended in the Transvaal in 1915 for such supplies as are listed by the Government Mining Engineer was £10,889,115. This may be compared with the total of white and native wages and salaries, namely, £13,501,291. It is difficult to segregate the mill supplies. Caldecott gives the following as the average consumption of metallurgical stores per ton of ore milled by the Consolidated Gold Fields companies in 1913: Mercury, 0·0664 lbs.; lime, 75 per cent., 2·1822 lbs.; sodium cyanide (130 per cent.), 0·3072 lbs.; zinc, 0·3965 lbs.; lead acetate, 0·0487 lbs.; bisulphite of soda, 1·4805 lbs. The total amount expended on the Rand in the same year for purchase of the chief mill supplies is listed below: Cyanide, £538,366; zinc, £234,330; lime, £124,850; shoes and dies, £159,552; tube mill pebbles, liners, etc., £56,361; mercury, £34,435. These few figures sufficiently emphasize the importance of careful buying and, back of that, of systematic and thorough study of the quality, uses, and possible substitutes for each material bought. Since the war began, great progress has been made in this direction, and various inter-mine committees are now at work looking for substitutes or methods of decreasing the amount used per ton. From their work important technological assistance may be expected. The Consolidated Gold Fields maintains, under the direction of A. McArthur Johnson, a testing-laboratory that is of much service in setting standards for supplies.

COST OF POWER

Most of the mines now buy power through the Victoria Falls Power Co., which maintains steam-generating stations, transmission lines, and pipes for distributing electricity and compressed air. Where individual power stations are maintained at the mine there is a by-product in that the waste steam is used to warm the solutions and so facilitate decantation. That this is not more general is due to the fact that the purchase of current is so common. South Africa is fortunate in possessing abundant coal that may be cheaply mined. This, with the excellent character and large size of the generating stations, results in low charges for power. Contracts are made for 12 and 20 years and current is furnished at 2,100 and 525 volts. The consumer supplies a sub-station building and pays an additional 2 per cent. on his bill to cover losses in transforming and stepping-down the current, but the switches, transformers, and other gear are furnished by the power company. The standard and price on a 12-year contract is 0·515d. per unit so long as the monthly load factor is 70 per cent. or better. The price is subject to revision under certain contingencies as to cost of production, and there is a penalty of 7s. per hour per 100 kw. for failure to supply current. Actually there are remarkably few stoppages, since the power company draws from several stations and has a network of transmission lines. The largest station is at Vereeniging, where the Vaal River furnishes abundant water for the condensers and the New Cornelius Colliery supplies coal. The plant is equipped with mechanical stokers, water tube boilers, and every device for labour-saving. It is, I believe, the fourth largest power station in the world and supplies about 25,000,000 electric units per month to the system, using about 3 per cent. of its gross output to move its own machinery. About 5 per cent. is lost in transmission. The coal consumption varies from 1,100 to 1,300 tons per day, depending upon the proportion of total load assigned to this station, and, despite the fact that the coal is high in ash, the generating cost is the lowest of that at any of the company stations. It is planned to increase the plant to a size that will demand 60,000 tons of coal per month. Thanks to the excellent manner in which the scheme has been carried out, the company is a profitable enterprise despite the low price at which current is sold. In this particular the Rand mines are fortunate.

LABOUR PROBLEMS.

The mills have a constant fight to keep from having an undue proportion of the least efficient men passed to them. A poor workman underground is a danger to so many aside from himself that naturally and properly the tendency is to make a place for him at the surface. Here he is often able to work effectively, but it is not a rule without exceptions. Native labour at best has many drawbacks and can hardly be expected to show high efficiency, but in its distribution the mills get the worst of it. The same is true to some extent of white labour, and many a man contrives to keep his connection with the pay-roll in a mill who would be dismissed even by a Rand shift-boss, who is usually so short-handed that he becomes extremely long-suffering. In most mining districts the pressure is for jobs at the surface and the bright young men from the schools of mines feel that there is better opportunity for them to use their technical knowledge above than below ground. On the Rand a larger part of the best technical graduates go underground for the reason that there is no other route to the coveted position of mine manager. Attempts have been made to balance matters by creating the position of reduction works manager with control over both stamp mill and cyanide annex, with a salary corresponding. So far this has not been widely done and most mill-men reach the limit of promotion and pay in a few years. After that the life is not especially attractive because of the monotonous routine. A Rand mill, handling always the same ore, artifi-

* In the Mining and Scientific Press.

cially kept as nearly as may be to a predetermined grade, does not offer much field for novelty. In certain organisations the disagreeable conditions are made worse by the line drawn between the operating man at the mine and the head office metallurgist. The operator is not unlikely to get into the attitude of dodging responsibility. The mill is handed to him complete, he has no part in its design or erection, and if changes are made they will be determined by the head office man. It is not unnatural, however deplorable it may be, that some of the men drift into the mental state where they reason that so long as they suggest nothing they will not be responsible for a failure and so long as they keep the other man's plant going even reasonably well, they are sure of a comfortable job. With neither increased pay nor credit to gain, why take responsibility for suggesting any change? I would not imply that all the mill superintendents adopt or act on any such ideas, but the feeling is present on the Rand and shows in the work. The consulting metallurgists as a class are a fine type and

have been wonderfully skilful in preventing the growth of this feeling among operating men, but it is not an easy task where lines are drawn so sharply between operation and design and where the rewards on the two sides of the line differ so greatly. The isolation of the district is a great handicap. Many of the men in the mills have never seen any other metallurgy than that of the Rand. They are extremely narrow specialists and it is difficult to see how this is to be avoided. The leading men keep in touch with practice around the world, but the subordinates cannot afford to do so on their incomes and they do not have the opportunity, open in most great mining districts of quitting and going elsewhere. How much this factor of isolation affects costs it is impossible to say, but that it does do so is patent. This brings out again the old fact that regardless of the character of the ore, the cost of power, or the type of plant, the human factor enters into milling, and to its consideration many anxious hours must be devoted by the chief on whom falls the main responsibility.

Correspondence and Discussion.

Comments on Questions Arising in Technical Practice or Suggested by Articles in the Journal—Views, Suggestions and Experiences of Readers.

A Reminiscence of 1889.

To the Editor, *South African Mining Journal*.

Sir.—The following little incident will, I think, prove of interest to quite a number of engineers and mining men. This morning, as I was waiting for a car at Bedford Road corner, Yeoville, I noticed some papers lying about on the pavement, and one especially caught my eye, as I noticed the name of Roberts. On looking closer, I was much interested to see that the letter was addressed to C. T. Roberts, was from Messrs. Galloway, Ltd., Manchester, and was dated December, 1889. It was a specification for a patent steel Galloway tube boiler. Mr. C. T. Roberts was a well-known consulting engineer here in those days, and used to be a frequent contributor to the *Mining Journal*, when the *Mining Journal* had its offices in Leake's Chambers, and Mr. H. Wilson Fox was on the editorial staff. The last I heard of Mr. C. T. Roberts, which was quite a long time ago, was that he was managing a big mine in the Mysore district, India. I was with Mr. Roberts in those days, as assistant, and remember getting out the plans and supervising the erection of the surface plant at the Orion, Black Reef, when Mr. Lang was manager there, and these plans were reproduced in the *Engineering*. Also in those days the late Captain Saner was manager of the Van Ryn, to which mine we used to make monthly visits on horseback. —Yours, etc.,

PERCY RANSOME.

59 Meischke Buildings, Johannesburg,

October 30th, 1917.

High Explosives.

To the Editor, *South African Mining Journal*.

Sir.—In the last number of your journal I saw an article stating that "there is a great likelihood of South Africa running short in high explosives in the near future." Now I, as a practical chemist, have experimented for some time to find a cheap and effective explosive, which moreover can be made in South Africa out of ingredients found in South Africa. I have been very successful, and made an explosive which is even more powerful than blasting gelatine, and

moreover can be made locally out of materials found in abundance in South Africa. Furthermore, no machinery or elaborate plant is required for making my blasting composition, which can be made in either powder or gelatine form. But—now comes the "but"—I do not know how to bring the thing into the market or make the matter known. Could you perhaps take the matter up, or hand this letter to some party interested? I should be very thankful if you did.—Yours, etc.,

"F. C."

Johannesburg, Oct. 26, 1917.

[The name and address of the writer will be given to anyone interested.—Ed.]

Swaziland Tin.

The following are the results of the operations of this company for the month of September, 1917:—Concentrate recovered, 31 long tons; estimated profit (taking tin at £215 per ton), £1,229; add adjustments in respect of previous shipments, £507; total estimated profit, £1,736.

East African Rubber.

Samples of East African rubber, which have been forwarded to the Industries Department by the British authorities at Tanga, B.E.A., are now on exhibition at the office of the Scientific and Technical Committee, Room 18, New Law Courts, and may be inspected by anyone sufficiently interested in the matter, on application to the secretary of the above-mentioned committee.

"RIVERSEA" PAINT.

Quite different from all other paints, supplied in any ordinary colour. Elastic, Waterpoor, impervious to heat, cold and atmospheric conditions. A perfect preservative for Iron, Wood, Stone, &c. Salt water has no effect, is a positive cure for damp, resists the action of strong acids. Can be submerged under water, and in use withstands very high temperatures of superheated steam. Sole Manufacturers—THE CASSON COMPOSITIONS CO., LTD., Fulham, London, England.



THE WEEK IN THE SHAREMARKET.

Heavy Fluctuations in Springs—Business Active in Far East Favourites.

THE market closed easier on Friday evening, and the weakness was accentuated at Saturday's call. In fact, with the exception of the Modderfontein group and City Deep everything, save for a few unconsidered trifles, was lower. City Deep recovered 2s. from their minimum of yesterday and a call of 2s. 6d. on 64s. was bought for thirty days. The opening on Monday morning was devoted mainly to Springs Mines which advanced to 76s., subsequently losing 6d. Government Areas were also in demand at improved rates. The call was featureless, with no change worth noting, and a very much reduced return in actual business. Springs gradually lowered away during the day to 74s. 9d. The publication of the result of the tenders for the new areas was not well received by the market, so far as Springs were concerned, the stock promptly falling to 71s. 9d., from which it rallied to 73s. sales and sellers. In the afternoon Lace Props had a run which brought them for the moment to 7s. 10d. On Tuesday morning Springs were an active market round about 72s. At the call, more or less of a panic set in, Springs falling to 70s. 6d., a drop of 5s. 6d. in twenty-four hours. Rand Selections also had a fall of 7s. 6d. from their top price of 97s. 6d. after change yesterday, and Government Areas of 2s. The only stocks which held their own were Modder Easts, City and Suburbans, and City Deep, the latter being quite in active demand. The losses all along the line must represent a large sum of money, and there is very little doubt that heavy liquidations have taken place to make good the differences in Springs. The market talk, for what it is worth, is to the effect that Springs were intended to go down, whether they succeeded in obtaining two areas, one, or none. The slump in Springs went no further, and later on they recovered to 72s. 6d., only to relapse once more to 70s. 3d., with a final slight hardening. Another reason given for the slump is the old unvarying one—overbuying with the expectation that someone would take all the high priced goods in the end (*vide* recollections of Randfonteins and Randfontein Deep). This explanation, in the light of subsequent events, appears to be the most reasonable one. On Wednesday morning, Springs again monopolised the opening business with sales at 71s. to 71s. 9d. The call once more brought a lowering tendency. The market was generally dull and inactive, with a further drop in Rand Selections. A bid was made for Chartered Co. shares of 13s., which was afterwards increased to 14s., with sellers at 15s. The market was dull during the day with little change in prices. Springs closed at 71s. 9d. The opening on Thursday morning disclosed a strong tendency in Springs, which made from 72s. 6d. to 74s. 3d., the price of 79s. 4d. in London showing definitely that the opinion on the other side of the water is certainly more optimistic than here. At the call the stock weakened somewhat, without actual sales. City Deep lost their previous gains, and people seemed to be tired of Zaaiplaats. The doings in outside stocks during the past week are as under:—Sales: Monteleos, 44s. to 46s. 6d.; Alkalies, 90s. to 80s. 6d.; Union Tins, 3s. 8d.; South Van Ryns, 12s. to 11s. 3d.; Erfbloems, 2s. 6d.; Sakalavas, 8s.; New Farms, 2s. 2d. and 2s. 3d.; Phoenix, 10d. Buyers and sellers: Micas, 15s. 3d.; Corundums, 13s.; Rietspruits, 12s., 15s.; Invictas, 21s. 6d.; Henderson's Estates, 5s. 4d., 5s. 6d.

* * * * *

The following were the alterations in prices on Friday morning's call:—Africans, 8s. 2d., 8s. 5d.; Apex, 7s., 7s. 1d.; Bantjes, 2s. 9d.; City Deep, 63s.; City and Suburbans, 22s. 3d.; Mines Selections, 27s.; Concrete, 2s. 6d.; Daggafonteins, 26s.; Government Areas, 75s. 3d., 75s.; Knight Centrals, 2s. 9d., 3s.; Leeuwpoort, 14s.; Modder Bs, £8 12s. 6d.; £8 13s. 9d.; Modder Deep, £7 9s.; Modder Options, three-year, 7s. 9d.; Modder Options, four-year, 8s. 2d.; New Modders, £24; Pretoria Cements, 89s. 6d.; Rand Selections, 93s.; Sub Nigels, 24s. 9d.; Springs, 72s. 9d.; Village Deep, 20s. 6d., 20s. 3d.; Wolhuters, 5s. 9d., 6s.

| | Fri. | Sat. | Mon. | Tues. | Wed. | Thurs. |
|-------------------------------|--------|--------|--------|--------|--------|--------|
| | 26th | 27th | 29th | 30th | 31st | 1st |
| African Farms | 8 0* | 8 1* | 8 1* | 8 0* | 8 0* | 8 2 |
| Apex Mines | 7 4* | 7 2* | — | 7 6* | 7 6* | 7 6* |
| Bantjes Con. | 2 7 | 2 7* | 2 7* | 2 7* | 2 7 | 2 7 |
| Brakpan Mines | 114 6* | 115 0* | — | 110 0* | 110 0* | 110 0* |
| Brick & Potteries | — | 5 0* | 5 0* | 5 0* | — | 5 0* |
| Brit. South Africa | — | — | — | — | 13 0* | — |
| Bushveld Tins | 9 6* | — | — | 0 6* | 0 6* | 0 6* |
| Cassel Coals | 25 0* | — | — | — | — | — |
| City & Suburban | 21 0 | 21 0* | 22 0 | 22 6 | 22 6 | 22 3* |
| City Deep | 62 3 | 64 0 | 64 3 | 65 3 | 65 3 | 63 9 |
| Cloverfield Mines | 8 9* | 9 0 | 8 9* | 8 10 | — | 8 6* |
| Clydesdale Colls. | 12 0* | — | 12 0* | 12 0* | 12 0* | 12 0* |
| Concrete Const. | 3 0* | 3 0* | 2 3* | 3 0* | 2 3* | 3 0* |
| Con. Investments | — | — | — | 19 0* | 19 0* | 19 0 |
| Con. Langlaagte | 18 6* | 19 0* | 19 0* | 19 0* | 19 0* | 19 0 |
| Con. Main Reefs | 11 6* | 14 9 | 14 9* | 14 9* | 14 9* | 11 9* |
| Con. Mines Select. | 28 0* | 28 0* | 28 6 | 25 0* | 26 0* | 27 0* |
| Coronation Frees. | 0 3* | — | 0 3* | 0 3* | 0 3* | 0 0* |
| Crown Diamonds | 1 3* | 1 3 | 1 6* | 2 0* | 1 3* | 1 6 |
| Crown Mines Deb. | £98* | £98* | — | £98* | £98* | — |
| Daggafontein Mines | 26 0 | 25 6* | 25 6* | 25 6* | 25 6* | 25 9* |
| Dagga, Op. (3yrs.) | 11 6 | 11 3* | 11 3* | 11 6* | 12 0* | 11 6* |
| Durban Rood. Dps. | 12 6* | — | — | — | 11 6* | — |
| East Rand Coals | 2 1* | 2 1* | 2 1* | 2 1 | 2 1 | 2 1* |
| East Rand Deep. | 0 10* | 0 16* | 0 11* | 0 11* | 0 10* | 0 11* |
| East Rand Minings | 19 0* | 18 6 | 18 0* | 18 0* | — | 16 0* |
| East Rand Props. | 6 9* | 7 0 | 6 9* | 6 9* | 6 9* | 7 0 |
| East Rand Debs. | £63* | £63* | — | £63* | £63* | — |
| Eastern Golds | 1 1* | 1 1* | 1 1* | 1 2* | 1 2* | 1 3* |
| Frank Smith Diam. | 3 7 | 3 6* | 3 7 | 3 7 | 3 6 | 3 6* |
| Geduld Props. | 41 6 | 40 9* | 40 6 | 39 3 | 39 3 | 40 0* |
| Geldenhuys Deep | 22 0* | — | — | — | 22 6* | — |
| Glencairns | 1 0* | 1 0* | 1 0* | 1 0* | — | 1 0* |
| Glencoe Collieries | 8 6* | 8 6* | 8 6* | — | 8 6* | — |
| Glynn's Lydenburgs | 18 0* | 18 0* | 18 0* | 17 6* | 17 6* | — |
| Government Areas | 76 6 | 76 0 | 76 3 | 74 3 | 74 6 | 75 0 |
| Jupiters | 4 3* | 4 6* | 4 6* | 4 6* | 4 7* | 4 6* |
| Klerksdorp Props. | — | — | — | 1 9* | — | 2 6* |
| Knight Centrals | 3 0* | 3 2 | 3 1 | 3 0* | 3 0* | 3 0* |
| Knights Deep | — | — | 10 0* | — | — | 7 0* |
| Lace Props. | 6 9 | 6 3 | 6 4* | 6 6 | 7 0 | 7 9 |
| Leeuwpoort Tins | 13 3* | 13 6* | 13 6* | 13 6* | 13 6* | — |
| Luipaardsvlei Est. | 5 0* | 5 0* | 5 0* | 5 0* | 5 0* | 5 0* |
| Lydenburg Farms | 8 1 | 7 11* | 8 0 | 7 6 | 7 6 | 7 6 |
| Main Reef Wests | 3 0* | 3 0* | 3 6* | 3 0* | 3 0* | 3 1 |
| Meyer & Charlton | 103 9* | 105 0* | — | 103 9* | — | 105 0* |
| Middelvlei Est. | 1 0* | 1 0* | 1 0* | 1 0* | — | 1 0* |
| Modder B | 168 0* | 169 6 | 168 0* | 168 0* | 167 6* | 170 0 |
| Modder Deep | 150 0 | 149 6 | — | 149 0 | 149 0 | 148 0 |
| Modder Easts | 21 3 | 21 3 | 21 3 | 21 3* | 21 3 | 21 3 |
| Modder Op. (3yrs.) | 7 9 | 7 8* | 7 6* | 7 6* | 7 7* | 7 7* |
| Modder Op. (4 yrs.) | 8 0* | 8 0* | 8 1* | 8 1* | 8 1 | 8 0* |
| Natal Nav. Col. | — | 20 0* | — | 20 0* | — | 20 0* |
| National Banks | 250 0* | 250 0* | 250 0* | 250 0* | 270 0* | 260 0* |
| New Bolksburgs | — | 1 3* | 1 3* | 1 3* | 1 3* | 1 3* |
| New Eland Diam. | 26 0 | 25 3* | — | — | 25 0* | — |
| New Era Cons. | 11 3* | 11 3* | 11 3* | 11 3* | 11 0* | 11 0 |
| New Geduld Deep. | 7 5 | 7 4* | 7 5* | 6 9 | 6 7* | 6 8* |
| New Heriots | — | — | 24 0 | 34 0* | 35 0* | 35 0* |
| New Kleinfonteins | 19 0* | 19 0 | 18 9* | 19 0* | 19 0* | 18 9* |
| New Modders | 480 08 | 477 6* | 467 6* | 465 0* | 480 0* | 477 6* |
| New Rietfonteins | — | 1 4* | 1 4* | — | 1 4* | 1 4* |
| New Unifids | 6 6* | 6 6* | 6 6* | — | 6 6* | 6 6* |
| Nigels | — | 3 6* | — | — | — | — |
| Nourse Mines | 19 0* | 19 6* | 19 0 | 19 0* | 18 9* | 19 0* |
| Piggs Peak Dev. | — | — | 2 6* | — | — | — |
| Premier Prefs. | — | — | — | — | — | 148 6* |
| Pretoria Cements | 88 6* | 88 6 | 88 0* | 89 0* | 88 0* | 88 3* |
| Princess Estates | 1 9* | 1 9* | 1 9* | — | — | 1 9* |
| Rand Collieries | — | — | 3 3* | — | 3 0* | 3 0* |
| Rand Klips | 10 0* | 9 10* | 9 9* | 9 11* | 9 9* | 9 10* |
| Rand Nucleus | 1 4* | 1 5 | 1 4* | — | 1 4* | 1 4* |
| Rand Select. Corp. | 94 6* | 94 0* | 95 0 | 91 0 | 89 6 | 91 0 |

*Buyers. +Sellers. ^aOdd lots. ^bEx London.

MINING EXAMINATIONS.

Study for Certificates as Mine Captains, Mine Managers, Surveyors, Mechanical and Electrical Engineers, and Engine Drivers. Private Tuition and Correspondence Lessons, where personal tuition is impracticable. Practical Mathematics and Electrotechnics. E. J. MOYNIHAN, Consulting Engineer, Cuthbert's Buildings, corner of Eloff and Pritchard Streets, Johannesburg, P.O. Box 2061.

| | Fri., 26th | Sat., 27th | Mon., 29th | Tues., 30th | Wed., 31st | Thurs., 1st |
|---|---------------|---------------|---------------|----------------|---------------|----------------|
| Raudfontein Deeps | 4 | 4* | 4 | 3* | 4 | 0* |
| Randfontein Ests. | 12 | 6* | 12 | 6 | 13 | 6* |
| Rooibergs | 9 | 7* | 9 | 7* | 9 | 9* |
| Rooedeport United | 5 | 6* | 5 | 6* | — | — |
| Rose Deeps | 20 | 0† | 15 | 0* | 20 | 0† |
| Ryan Nigels | 2 | 9* | 3 | 0* | 3 | 6 |
| Shebas | — | — | 1 | 0* | — | — |
| Simmer Deeps | — | — | — | 2 | 7 | — |
| S.A. Lands | 5 | 5* | 5 | 6 | 5 | 1* |
| Springs Mines | 75 | 3 | 74 | 6 | 75 | 6 |
| Sub-Nigels | 25 | 6 | 25 | 0* | 25 | 6 |
| Swaziland Tins | 27 | 0† | — | 27 | 0* | 27 |
| Trans. Lands | — | — | 14 | 0* | 15 | 0† |
| Trans. G.M. Estates | 14 | 6* | 14 | 6* | 16 | 0† |
| Van Ryn Deeps | 73 | 9 | 73 | 6 | 73 | 6 |
| Village Deeps | 20 | 3* | 20 | 0* | 19 | 6* |
| Village M. Reefs | 14 | 6† | 15 | 0† | — | — |
| Welgedachts | 21 | 0* | 21 | 0* | 21 | 6* |
| West. Rand Estates | 1 | 9* | 1 | 9* | 1 | 9* |
| Witbank Colliery | 43 | 6* | 44 | 0* | — | 44 |
| Witwatersrands | 30 | 0* | 30 | 0* | 35 | 0† |
| Witwatersrand Dps. | 8 | 0* | 8 | 0 | 8 | 0 |
| Wolhuters | 7 | 6* | 7 | 9† | 7 | 6 |
| Zaalplaats Tins | 9 | 3 | 9 | 3* | 9 | 0A |
| Union 5 per cent., £102 2s. 6d.; £102*; £102*; £102*; £102 2s. 6d.; £100 (ex interest). | — | — | — | — | — | — |

*Buyers. †Sellers. A Odd lots. BEx London.

The Government white labour report for September shows 485 applications for employment in Johannesburg in the month as against 122 in August, an increase of 363. The applications from employers numbered 118 as against 61, while employment was found for 163 as against 61 in August. The estimated value of plans passed by the eight Reef municipalities amounted to £82,158, while tenders accepted by the Government amounted to £80,522 as against £15,372 in August. In the building trades all classes of men are fairly well employed. There appears to be a fair amount of construction work on hand, more particularly in the East Rand district. Engineering continues brisk, and some firms are manufacturing new machinery of a class never attempted in the country before. Castings are now being made locally which were always imported before the outbreak of war, and the prices of the finished article in many cases compare more than favourably with the pre-war imports. Printing continues fair to busy, while the boom in the furniture trade is likely to continue. Milling is kept going at full capacity, while mining continues as usual, and skilled miners are in a strong demand. In Pretoria business in general has improved slightly on last month. The soap factory is kept very busy and is turning out a fine quality of soap. "Since my last visit to the salt pan," writes the superintendent, "about a year ago, there have been some wonderful changes for the better in the form of new machinery, new buildings and other new improvements. Twelve white men and 300 natives are now working there." The Capetown report records a brisk demand for labour in all branches of trade and industry. As a rule it is only in the cases of physical unfitness, incapacity or old age that artisans have difficulty in securing regular employment. It is apparent that a certain amount of unrest exists in industrial circles, caused by the increase in the cost of food, clothing and rent, and I am informed," says the Capetown superintendent, "that demands for increases in wages are likely to be made in some trades at an early date." In Durban it is reported there has again been a slight improvement in the labour market during the month, although there are still a number of men seeking employment, principally of the unskilled and semi-clerical classes. Building is very active, work having been commenced on the following contracts: Military Camp at Jacobs; Convalescent Hospital, Beach; and Military Hospital, Beach.

CLIENTS REQUIRING COPPER ORES

associated with Tin, Lead or Zinc for smelting purposes
SEEK INFORMATION CONCERNING MINES OR
MINING DISTRICTS producing such material.

They are prepared to acquire a going concern or would assist in the development of promising prospects, by arrangement after investigation and on the receipt of reports and samples, with full information re finance, means of transport from the mines to the coast and the cost of shipping the products in normal times to England.

PELLEW-HARVEY & COMPANY,
62, London Wall,
LONDON, E.C.2, England.

PERSONAL.

The annual meeting of De Beers will be held at Kimberley on Friday, November 30.

* * * * *

The whole community learned with deepest regret this week of the death, while flying, of Acting Squadron Commander Aylmer Fitzwarrine Bettington, R.N., youngest son of Colonel Bettington, the Vice-Chairman of the Johannesburg Stock Exchange.

* * * * *

Mr. Louis Marks, the elder son of Senator Marks, who was wounded some time ago, was recently reported gassed, and is now in the Prince of Wales Hospital. His brother, who, after being wounded in an aeroplane accident, was transferred to the R.H.A., is now in Flanders.

GOVERNMENT NOTICE No. 1478 of 1917.

With reference to Government Notice No. 711, dated 28th May, 1917, calling for applications for the lease of the exclusive right to mine for precious metals on certain portions of the Farms De Springs No. 15, Geduld No. 24, and De Rietfontein No. 14, in the Mining District of Boksburg, notice is hereby given that the Government has provisionally accepted the tenders of Barnato Brothers and Springs Mines, Limited, for the Springs South Geduld area and the De Rietfontein East area respectively, and has decided to decline the tenders received for De Rietfontein West and the Geduld East areas. The above-mentioned notice is hereby withdrawn in terms of Clause 3 thereof.

H. WARINGTON SMYTH,

Secretary for Mines and Industries.

Department of Mines and Industries, Pretoria.

RANSOME'S DRAWING AND BLUE PRINTING OFFICES.

Mechanical Drawings and Tracings of all descriptions.



PERCY RANSOME,
59, Meischke's Buildings, c/o Market & Harrison Sts.,
P.O. Box 671. JOHANNESBURG. 'Phone 3410.

September Company Registrations.

5283. The Skilpat Tin Mines, Ltd.—1 and 2 Old Exchange Buildings, Commissioner Street, Johannesburg; capital, £5,000.
 5284. The Harvester Diamond Mining Co., Ltd.—32 Beckett's Buildings, President Street, Johannesburg; capital, £1,500.
 5285. Queen's Buildings, Ltd.—280 Vermeulen Street, Pretoria; capital, £1,500.
 5286. Northern Houses, Ltd.—Carl Street, Pretoria West; capital, £100.
 5287. Wellington Bacon and Provisions Factory.—Barsdorf Buildings, Marshall Square, Johannesburg; capital, £25,000.
 5288. Patel & Patel, Ltd.—Brakfontein No. 278, P.O., Zwartruggens, District Rustenburg; capital, £500.
 5289. Thomas Andrews & Sons, Ltd.—"The Maid of the Mist" Mine, Louws Creek, District Barberton; capital, £5,000.
 5290. R. L. Esson & Co., Ltd.—Steytler's Buildings, Loveday Street, Johannesburg; capital, £12,000.
 5291. Hoosen, Ltd.—Church Street, Middelburg; capital, £1,500.
 5292. Sheffield Electro-Plating and Enamelling Works, Ltd.—102 President Street, Johannesburg; £1,000.
 5293. Premier Tobacco Agency, Ltd.—13 Yeo Street, Yeoville, Johannesburg; capital, £1,000.
 5294. African Guarantee Boot Manufacturers, Ltd.—59 Sherwell Street, Doornfontein, Johannesburg; capital, £2,500.
 5295. Modern Dwellings, Ltd.—14 Bureau Street, Pretoria; capital, £2,000.
 5296. Cereal Products, Ltd.—34 and 35 National Mutual Buildings, corner Market and Rissik Streets, Johannesburg; capital, £1,000.
 5297. The Underwriters, Ltd.—34 and 35 National Mutual Buildings, corner Market and Rissik Streets, Johannesburg; capital, £2,000.
 5298. Varad Trading Co., Ltd.—42 President Street, Johannesburg; capital, £2,000.
 5300. The Glendower Salt Co., Ltd.—207 Consolidated Buildings, Johannesburg; capital, £4,500.
 5301. Motan, Ltd.—2 Kerk Street, Johannesburg; capital, £500.
 5302. Hassim, Ltd.—12 Rosenberg Arcade, Market Street, Johannesburg; capital, £2,500.
 5304. Selati Minerals, Ltd.—51 Sauer's Buildings, Loveday Street, Johannesburg; capital, £4,000.
 5305. The Pretoria Iron Mines, Ltd.—264 Vermeulen Street, Pretoria; capital, £25,000.
 5306. Wineberg, Ltd.—94a Ellof Street, Johannesburg; capital, £2,000.
 5307. White Leads (S.A.), Ltd.—335 Frederick Street, Pretoria; capital, £2,000.
 5308. President Properties, Ltd.—37 Simmonds Street, Johannesburg; capital, £9,000.
 5309. Anglo-American Corporation of South Africa, Ltd.—2 National Bank Buildings, corner Simmonds and Market Streets, Johannesburg; capital, £1,000,000.
 5310. Carlchew Collieries, Ltd.—Cullinan Buildings, Main Street, Johannesburg; capital, £30,000.
 5311. Riverton Diamond Syndicate, Ltd.—57, 58 & 59 Exploration Buildings, Commissioner Street, Johannesburg; capital, £25,000.
 5313. Maritzburg Motor Marts, Ltd.—Corner Rissik and Marshall Streets, Johannesburg; capital, £1,000.
 5314. Hampton's, Ltd.—123a Fox Street, Johannesburg; capital, £1,200.
 5315. Natal Plantations, Ltd.—2 Estate Buildings, Fox Street, Johannesburg; capital, £3,000.

FOREIGN COMPANIES.

5303. Legate's Competitions, Ltd.—Care of John Meikle Legate, Dowell's Buildings, Loveday Street, Johannesburg; capital, £25,000.
 5312. United States Steel Products Company.—Care of A. E. Newson, Consolidated Buildings, corner Fox and Harrison Streets, Johannesburg; capital, 1,000,000 dollars.

ALTERATIONS AND ADDITIONS TO FOREIGN COMPANIES.

4646. Southern Van Ryn Reef Gold Mining Company, Ltd.—Johannesburg.

SPECIAL AND EXTRAORDINARY RESOLUTIONS.

1434. Anglo-French (Transvaal) Navigation Coal Estates, Ltd., Johannesburg.—New Articles.
 4758. Rand Tea Rooms, Ltd., Johannesburg.—Bond.
 4957. The Smallholdings Company, Ltd., Johannesburg.—Confirmation of Sale.
 5071. Victoria General Investment Company, Ltd., Johannesburg.—Increase of capital.
 3209. Land and Trading Company, Ltd., Pretoria.—Alteration of Articles.
 5242. Phoenix Furnishing Co., Ltd., Johannesburg.—Liquidation.
 3890. Phoenician (Rhodesia) Company, Ltd., Johannesburg.—Liquidation.
 3588. Griffin Gold Mining Company, Ltd., Pretoria.—Liquidation.
 3566. The Rhodesian Mines Selection Company, Ltd., Johannesburg.—Liquidation.
 4917. The Smallholdings Company, Ltd., Johannesburg.—Director.
 4911. African Iron and Steel Products, Ltd., Johannesburg.—Alteration of Articles.

NOTICES OF INCREASE AND DECREASE OF CAPITAL.

5071. Victoria General Investment Company, Ltd., Johannesburg.—Increased from £425 to £525.
 4434. White Limes, Ltd., Johannesburg.—Increased from £6,500 to £10,500.
 5178. The City Estate Company, Ltd., Johannesburg.—Reduced from £35,500 to £10,650.

THE FOLLOWING COMPANIES HAVE BEEN PLACED IN LIQUIDATION.

5242. Phoenix Furnishing Company, Ltd., Johannesburg; capital £1,500.—Voluntary.
 3890. Phoenician (Rhodesia) Company, Ltd., Johannesburg; capital £1,800.—Voluntary.
 3588. Griffin Gold Mining Company, Ltd., Pretoria; capital, £15,500.—Voluntary.
 3566. The Rhodesian Mines Selection Company, Ltd., Johannesburg; capital, £100,000.—Voluntary.
 1933. Victoria Gold Mines, Ltd., Johannesburg; capital, £12,000.—By order of Court.

NOTICES OF CHANGES OF ADDRESS.

1469. The Vereeniging Estates, Ltd.—Erven 863 and 864, Vereeniging, Transvaal.
 1997. The Vereeniging Brick and Tile Factory, Ltd.—Erven 863 and 864, Vereeniging, Transvaal.
 5170. The Union Mica Mines, Ltd.—Realty Trust Buildings, Simmonds Street, Johannesburg.
 5181. Union Corundum Mines, Ltd.—Realty Trust Buildings, Simmonds Street, Johannesburg.
 4788. The Ponhal Exploration Syndicate, Ltd.—23, Southern Life Buildings, Main Street, Johannesburg.
 3467. Fraser and Chalmers, Ltd.—Care of W. H. Haig, Farrar Buildings, Simmonds Street, Johannesburg.
 5029. Laher, Ltd.—60 Main Reef Road, Denver, Johannesburg.
 4864. Laher & Cassam, Ltd.—183 Market Street, Johannesburg.
 4748. Swaziland Minerals, Ltd.—H/17 Trust Buildings, Fox Street, Johannesburg.
 4832. United Printing and Publishing Company, Ltd.—45 Simmonds Street, Johannesburg.
 4134. J. N. Theron, Kuhn & Co., Ltd.—Corner Pim and Becker Streets, Newtown, Johannesburg.
 5235. Johannesburg Ice Manufacturing and Cold Storage Company, Ltd.—Richmond, Johannesburg.
 4859. Kapodra Estate, Ltd.—Bethel, District Lichtenburg, P.O. Bodenstein.
 4256. South African Jewish Publications, Ltd.—2 Loveday Street, Johannesburg.
 4965. Stewart Sanders & Co., Ltd.—205 President Street, Johannesburg.
 3236. Louis Moore Proprietary Mines, Ltd.—94 Stock Exchange Buildings, Johannesburg.
 4917. Smallholdings Co., Ltd.—52/3 Standard Bank Chambers, Commissioner Street, Johannesburg.
 1892. Coronation Freehold Estate Town and Mines, Ltd.—407/408 Consolidated Buildings, corner Fox and Harrison Streets, Johannesburg.
 3660. Ripon, Ltd.—407/408 Consolidated Buildings, corner Fox and Harrison Streets, Johannesburg.
 4854. Amarsi Gokal, Ltd.—Kruger Street, Louis Trichardt.
 5225. Legate's Monthly, Ltd.—6 Old Arcade, Commissioner Street, Johannesburg.

Tell Advertisers you saw it in the *South African Mining Journal*.

'Phone 4673.

Box 3162.

OSBORN'S
HAND AND
HEART **HOLLOW** **DRILL**
STEEL.

Write or 'Phone for Stock List.

SAMUEL OSBORN & Co., Ltd., **SHEFFIELD and**
JOHANNESBURG.

WE NEVER // SOLICIT // FOR ORDERS // UNTIL THE // APPLICANT // HAS HAD // OPPORTUNITY // TO // PROVE // RELIABILITY // BY A // FREE // TEST //

VISLOK

RELIABLE SAFETY LOCK NUT

VISLOK—A SIMPLE VALVE OR TAPPET ADJUSTMENT.

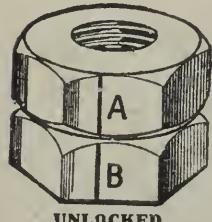
"A set of 'VISLOK' tappet nuts which has seen considerable usage in one of my DORMAN engines seems to overcome all these drawbacks, and is very efficient. IN FACT, I FEEL SURE THE NUTS HAVE NOT BEEN TOUCHED FOR SEVERAL HUNDRED MILES, WHICH IS EXTRAORDINARY WHEN IT IS REMEMBERED THAT IN THIS DISTANCE EACH VISLOK HAS RECEIVED A MILLION OR MORE IMPACTS."

Vislok tappet nut resembles a divided hexagon nut capped but actually consists of two nuts hydraulically pressed together, with a common thread. Vislok is screwed to the valve stem as an ordinary nut, and, when the correct clearance is obtained, is locked by moving out of register the markings that appear on the hexagon faces. To unlock, the markings are brought to register when the Vislok may be simply unscrewed.

The "Vislok" tappet will be found convenient for modernizing ancient mounts, as it is only necessary to remove the valves and thread the stems with a standard die. The "Vislok" then replaces the old valve cotter, and the troublesome task of **TAKING UP VALVE GEAR WEAR IS REDUCED TO A FIVE-MINUTE JOB.**

Motor Cycling, Nov. 14, 1916.

VISLOKS
have won
a Great
Mechanical
Fight.



VISLOK Ltd., 3. ST. BRIDE'S HOUSE, SALISBURY SQUARE FLEET STREET, LONDON, E.C.

FREE SAMPLE FOR TESTING ON APPLICATION TO

JOHANNESBURG AGENTS:
HARVEY & RUSSELL, Ltd., Box 2043.

DURBAN AGENT:

J. MORTIMER MOIR, Smith Street.

CAPE TOWN AGENTS:
JOHN HADDON & CO. (Africa) Ltd., 80 Bree Street.

ALFRED F. ROBINSON, LTD.,

17/19 & 22, Southern Life Buildings, JOHANNESBURG.

Sole Agents for **Messrs. R. GARRETT & SONS**, Leiston, Suffolk: Locomotives, Portable Engines, etc.; **Messrs. BRITISH MANNESMAN TUBE CO., LTD.**, Landore, Wales: Solid Drawn Piping, Poles and Boiler Tubes; and **Messrs. SULZER BROS.**, Winterthur, Switzerland: Centrifugal Pumps, Diesel Engines, etc. **Wrought Iron Pipe Fittings.**

P.O. Box 3228, Johannesburg.

Phone No. 3516.

Telegrams: "ALPHA."



THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.

Johannesburg Stocks "Good but Badly Assorted"—Low-Grade Mines—Petrol Supplies and Motors—The Tin Industry—White Lead Coming Through.

A CAPETOWN broker recently arrived here with the view of ascertaining the actual state of our stocks of mining material and structural steel girders for bridge and building works, and remarked to a mining material man that there were still plenty of stocks in Johannesburg. The Johannesburg man answered that was all very well as a general statement, but the trouble was that so many lines were out of stock that when any one firm was fixing up an order, it could hardly ever be completed from its own store. Hence the feeling of scarcity was emphasised. So far as actual business is concerned it was very dull in October, but on the very last day when buying took place for November a large and varied lot of orders were put out on the Commercial Exchange, but they were all of a fragmentary order. Notwithstanding the dulness of trade, there is an excellent undereurrent of confidence throughout trade circles. Perhaps one of the chief reasons is that the four new Government areas on the Far East Rand were tendered for by several millionaire firms which easily represent some twenty millions capital, on hand and at command. Obviously this is positive proof of confidence and implicit reliance in the future of the great gold mining industry. Another reason for congratulation as regards the future of the town is that the Standard Bank has decided to pull down its premises at the corner of Kloof and Market Streets opposite (diagonally) the Carlton Hotel and rebuild a five-storied edifice, which will not only occupy the present site but an adjoining stand of 100 feet by 50 feet has been secured. This will enable the Bank to have ample accommodation for itself, and it is said will provide one of the largest blocks of letting offices in Johannesburg. The total

floor space will be about 30,000 super feet. Property owners can be generally congratulated upon this new departure, as the controllers of one of the premier financial institutions in South Africa must be thoroughly alive to our present importance and the excellent probabilities of the future. Nevertheless, property owners at a distance must be reminded that this site is on the main artery to the railway station, therefore it must not be accepted that every part in Johannesburg is going ahead, although there is a little more life, as a general statement, in all parts.

LOW-GRADE MINES.

These well-grounded hopes are good, but there always seem some drawbacks in everyday life, and the question of the low grade mines is the bird of ill omen on this occasion. However, there is no need for undue despondency, as the matter is being taken in hand in a commonsense manner. The Knights Deep is one of those low-grade mines under the wing of the Consolidated Gold Fields, which means that it enjoys the benefits of excellent management. The chairman's speech, delivered at the annual meeting

COPPER CLAIMS FOR SALE.

Two blocks of Copper Claims in the Bwana M'Kubwa district of Northern Rhodesia. Considerable development work has been done and a large body of rich ore proved. Adjacent claims can be pegged. Offered for sale on account of death of an interested party; low price. Full particulars on application to—

EDWARD DODD, 19, LOVEDAY STREET
(Opposite Goldfields Hotel).

Agent for W. F. Stanley & Co., London, and Cambridge Scientific Instrument Co., Cambridge.

Mathematical, Nautical, Scientific and Electrical Instrument Maker.

Theodolites, Tacheometers, Levels, Artificial Horizons, Compasses, Etc. Switchboards, Telephones, Telegraph Instruments, Meggers and Meters. Fine Engineering and Small Press Work Executed. Telephone 3753.

P.O. Box 34,
LIVINGSTONE,
N. RHODESIA.

SIEMENS BROTHERS

WOOLWICH.

CABLES AND ACCESSORIES

TELEGRAPH TELEPHONE AND SIGNALLING APPARATUS

OVERHEAD LINE EQUIPMENT

PRIMARY CELLS &c., &c.

SIEMENS BROTHERS & Co., Ltd.,

WOOLWICH, LONDON, S.E.18

ESTABLISHED 1858.

Telegrams: "Siemens, Woolwich"

Telephone: City 6400 (7 lines).

HOME BRANCHES:

BIRMINGHAM.—Central House, New Street.
BRISTOL.—30, Bridge Street.
CARDIFF.—89, St. Mary Street.
GLASGOW.—66, Waterloo Street.
MANCHESTER.—196, Deansgate.
NEWCASTLE-ON-TYNE.—64-68, Collingwood Buildings.
SHEFFIELD.—22, High Street.
SOUTHAMPTON.—46, High Street.

INDIAN AND COLONIAL BRANCHES:

CALCUTTA.—Clive Buildings, Clive Street.
BOMBAY.—Rampart Row.
MADRAS.—Smith's Corner, Mount Road.
SINGAPORE.—1, 2, 6 & 9, Winchester House.
CAPE TOWN.—Norwich Union Buildings, St. George's Street.

SYDNEY.—42, Bridge Street.
MELBOURNE.—Dominion Chambers, 59-61, William Street.
WELLINGTON (N.Z.).—A. & T. Burt, Ltd., Courtenay Place.
DUNEDIN (N.Z.).—A. & T. Burt, Ltd., Stuart St.
AUCKLAND (N.Z.).—A. & T. Burt, Ltd., Customs Street West

Sole Representative in South Africa:

A. J. G. SIMPSON, A.M.I.E.E.,
P.O. BOX 239, CAPE TOWN.

Telephone 1202.

Telegrams: "WOTAN."

S. SYKES & CO., Ltd.

(INCORPORATED IN RHODESIA.)

Phone 2190. Box 2303. Telegrams: "PSYCHE."

JOHANNESBURG,

Mechanical & Electrical Engineers.

SOLE AGENTS FOR:—

C. A. Parsons & Co., Ltd.

Robey & Co., Ltd.

Sandycroft, Ltd.

Crossley Bros., Ltd.

The Firth Co., Ltd., (Screening).

Worthington Pump Co. Ltd.

Turbon Fan Co., Ltd.

John Cochrane, Ltd.

Geo. Kent, Ltd.

Cole, Marchent & Morley, Ltd.

Power & Mining Machinery Co., Ltd.

E. R. & F. Turner, Ltd.

Bradley & Craven, Ltd.

Ruberoil Co., Ltd.

Wailes, Dove Bitumastic, Ltd.

REFRIGERATION, ABATTOIRS AND BY-PRODUCTS PLANTS:

The Lightfoot Refrigeration Co., Ltd. | Standard Anhydrous Ammonia Co., Ltd. | Lockerbie & Wilkinson, Ltd.

ELECTRICAL: Crompton & Co., Ltd. | Langdon-Davies Motor Co., Ltd. | A. Reyrolle & Co., Ltd.
W. E. Burnand & Co. | D. P. Battery Co., Ltd.

held on Tuesday last was obviously carefully thought out in every detail, and should be read and studied by everyone having interests in Johannesburg and the Reef, and more particularly the mine employees and mine owners. It was stated that the indirect taxation of the low-grade mines per each ounce of fine gold recovered is 58 per cent. greater than that of the higher grade mines. It is therefore, the chairman continued, earnestly hoped that the Government will devise some ways and means of giving relief to the low-grade mines, at any rate during the period of the war. The deliberations of the last round table conference between the mine owners and the mine employees were on the whole so successful that the question of the war future of the low-grade mines seems essentially one for a similar conference, so that a united deputation could be arranged to the Government to ascertain what is best to be done to carry on. There is a minimum in all trade conditions; therefore when these are proved beyond doubt, that would be a very substantial basis to proceed upon, and if a relief in the taxes and even of the mine licences would enable the mines to continue, it appears that the wisest course for all concerned would be for the Government to assist the lame ducks over the stile. It is a difficult but urgent problem that requires a sensible solution, and it was felt that it is of such immediate importance that it should at least be mentioned in these notes.

PETROL SUPPLIES AND MOTORS.

The Government embargo on petrol was removed at nine o'clock on Saturday, October 27th. The official announcement was: "As the departmental requirements of the Government in the matter of petrol have now been guaranteed by the principal importers in the Union, there is no further need for the maintenance of the embargo on that commodity and that embargo has now been removed." As regards the idea that the Government is hoarding petrol, as a contradiction of this it is stated that the supplies for the main military force operating in German East are supplied direct from Sumatra and for the Nyassaland force

direct from America. The Government stepping in with their embargo unmistakably brought the question up with a round turn, and there are indications that sufficient has been done to prevent the Government taking further drastic action, although the big distributing companies are working in close touch with the Pretorian authorities. In taking a review of the position it is very evident that our Johannesburg motor position is a small affair as compared with the world-wide one. According to advices from America, apart from the great oil companies, it is said that the American Government is determined to control all petroleum for the prosecution of the war. It is further stated that the bring for oil and drilling the wells is only restricted by the necessary pipes, which are in limited supply as the demand is enormous, the price of crude oil having risen, thus stimulating more and more producers to drill new wells. Owing to the imperative demand by the American Government, stocks of petroleum are getting scarcer; then the merchant steamers are an additional factor in the demand, as well as the indispensable requirements of the air service, which is daily growing more important in the war areas. The air service needs extra refined and prepared petrol, which signifies a larger amount of crude oil to be treated, as compared with the ordinary motor petrol.

SOUTH AFRICAN INDUSTRIES—TIN.

Whilst on the rounds in gathering news there was noticed, in the window of Messrs. C. Wharton, Hood & Co., of the Southern Life Buildings, some dozen ingots of pure tin from the Zaaiplaats mine. The exhibit was most welcome and the writer never having seen so much tin exhibited in Johannesburg before, and being an enthusiast over South African industries and produce, felt compelled to investigate further. It was ascertained that the ingots had been

THE UNION MICA MINES, LTD.

Postal Address: P.O. Box 4509, Johannesburg.
Cable Address: "REAPING," Johannesburg.

Producers of best quality, good, clear Mica,
suitable for all purposes.

Cut in sheets, all sizes, big and small.

Also block & waste Mica, suitable for grinding.

ENQUIRIES SOLICITED.

P.O. Box 5548.

Telephone 2089.

Telegrams: "REINSTATE."

THE MINING REAL ESTATE AND INSURANCE AGENCY,

Auctioneers, Brokers & General Agents,

BETTELHEIM BUILDINGS, SIMMONDS STREET
(Opposite A.B.C. BANK.)

J. E. AZULAY, Manager.
Established 1888.

East Rand Claims a
Specialty.

Barnato Shares bought and carried with a 20% margin
Other Stocks according to value. Mines and ore of every
description bought. Properties financed. Reports from
well known mining engineers furnished.

“HYDROMAX”

New Water Hammer Drills to
supersede Reciprocating Drills.

The “Hydromax” weighs 90-lbs.
It is Suitable for Stoping, Raising and Driving.



No Mine Manager can afford
to neglect the economic
merits of the

‘HYDROMAX’

The Fastest Rock Drill
in the World.

We have exclusively manufactured drills for thirty-seven years and the “HYDROMAX” is our crowning effort.

THE CLIMAX ROCK DRILL & ENGINEERING WORKS, Ltd.,
CARN BREA, CORNWALL (Wm. C. Stephens, Managing Director).

Agents—

WM. HOSKEN & CO.,

Phones 4113 / 9.

Box 667, JOHANNESBURG. Telegrams: “HOSKEN.”

It drills 30% faster than any other drilling machine.

Low Air Consumption.

smelted at the mine, and the recently introduced furnace was realising expectations, and a regular output was assured. Further, according to the latest reports from the mine, the developments were gradually improving—but that is another matter, as the immediate object of this paragraph is to note that another industry is established in this country, and instead of sending the crude tin oversea to Swansea, we are rising to the occasion and doing something for ourselves, and every good South African must wish the staff and the company the success they deserve for their energy and initiative.

WHITE LEAD, OILS, AND PAINTS.

There is an acute shortage of white lead in Johannesburg and apparently throughout South Africa. However, it is satisfactory to record that when an indent was put up in the Commercial Exchange on Wednesday, quotations were forthcoming, and a transaction took place at 1s. 1d. per lb. for a decent line. This hint was followed up, and it was discovered that a consignment from London is due in Johannesburg about the middle of this month. This information seemed rather strange, as the British Government has an embargo on white lead; however, the explanation is simple and satisfactory, that the seller in question sold a parcel at the beginning of the year to one of the Union Government departments and on the strength of that the consignment now coming is the result of a priority order. There may have been similar orders executed, but this is the first one heard definitely about. The fact is full of significance that goods and material are dribbling through. Linseed oils are in the acute stage as regards shortage, as a distributing house had to refuse orders during this week. It is stated that it is now selling at 17s. 6d. per single gallon in Capetown. Business with the oil and colour houses has become tantalising in Johannesburg, owing to the shortage of many lines which are in everyday request. Money has never been better for spot, and forward delivery when the accounts become due.

TIMBER AND BUILDING MATERIALS.

Baltic deals have advanced from 1s. 3½d. to 1s. 3½d. per foot as a minimum price; floorings are also up a farthing, which is perhaps not very much, but the continuity is what tells, as one never knows where it will stop. Bricks are

very scarce and jobs are occasionally hung up awaiting bricks, the reason being that the demand is so good and persistent from town and suburbs. The prices are up from 2s. 6d. to 5s. per 1,000 on last quotations. Tiles on new orders are practically unobtainable for immediate delivery. A speculator purchased about 100,000 flat tiles at £6. in Maritzburg and £12½ is being asked here, but from all accounts buyers are holding aloof at the last quotation. There are a number of new jobs starting in the northern and other suburbs and tenders are out for a few business premises and many dwellings.

TRADE GLEANINGS.

Agricultural machinery is well to the front as the farmers are purchasing freely. It is known that four steamers have been diverted from the South African route to the direct one from New York to Europe. Electrical goods, especially household lights, are dribbling through from Great Britain. Steel plates are very scarce, the smaller sizes of ½ inch and under are practically unobtainable even at the nominal figure of 7s. per 100 lbs. The smaller sizes of round and square imported bar iron are very difficult to obtain, and then only a few bars can be picked up here and there.

REVISED PRICE LIST.

BUILDING MATERIALS.—Timber: Deals, Baltic, 9 x 3, 1s. 3½d. to 1s. 4½d.; flooring, 4½ x 2 and 6 x 2, 8½d. to 8½d. per square foot; flooring, 4½ x 1½, 9½d.; and 6 x 1½, 9½d.; ceilings, 6 x ½, 4½d. to 4½d. per square foot; pitch pine, 8s. 6d. per cubic foot; Oregon, 6s. 6d. per cubic foot; clear pine, ½ in. x 12 in., 1s. 1d. per foot; 1in. x 12in., 1s. 3d.; teak, 16s. 6d. to 17s. 6d. cubic foot; shelving, 10d.; jarrah, 12s. 6d. c. ft.; poplar, 1in. x 12in., 1s. 3d.; scantling, 1s. 3½d. to 1s. 4½d. ft.; beaver boards, 5d.; galvanised iron, 21-gauge, 6ft. to 10ft., 2s.; 11ft., 2s. 1d.; 12ft., 2s. 2d.; 26-gauge, 6ft. to 8ft., 1s. 10d.; 9ft. and 10ft., 1s. 10d.; flat galvanised, 21-gauge and 26-gauge.

HIGH EXPLOSIVES.

By the late W. R. QUINAN

(Many years Manager of the Cape Explosives Works, Ltd.)

An eminently practical book of direct interest to all Mining Engineers.

Cloth 8vo. 21s. net. Postage 5d.

S. RENTELL & Co., Ltd., 36, Maiden Lane, LONDON, W.C.2, Eng.

COLLIERIES ENGINEERING COMPANY, LTD. HattingSpruit,
(Registered in Transvaal Province.) NATAL.

Machinery Merchants, Iron & Brass Founders & Dealers.
New & Second-hand Material Bought & Sold.

FOUNDRY WORK A SPECIALITY.

Box 36. Tel. Add.: "Golsengoo." Phone 19.



BARFORD & Co., Ltd.

(Late Bull & Oehmen, Ltd.)

SCIENTIFIC AND MATHEMATICAL INSTRUMENT DEPARTMENT.

Large Stocks of Theodolites, Levels, Steel
Metallic Tapes and General Surveying
Appliances.

REPAIRS of Scientific Instruments A SPECIALITY.

Phone 1221. 59, RISSIK ST., Box
JOHANNESBURG. 4040.

NO MORE AIR LOSSES.

Pressed Steel
Bronze-Seated.

ROCKWOOD UNIONS.

Rustless. - Airtight.
Tested to 1000-lbs. per sq. in.

Sole Agents—Transvaal:

H. ALERS HANKEY
P.O. Box 3807,
JOHANNESBURG.

Sole Agents—Natal & O.F.S.:

THOS. BARLOW & SONS,
P.O. Box. 1011,
DURBAN.

HADFIELDS Ltd.

Hecla and East Hecla Works, Sheffield, England.

Workmen employed over 15,000
Works area 200 Acres.

HADFIELD'S SPECIAL FORGED STEEL BALLS FOR BALL AND TUBE MILLS



HADFIELDS LTD SHEFFIELD.

MINING REQUISITES of all kinds.

Sole Makers of HADFIELD'S PATENT
BRA' MANGANESE STEEL
The supreme material for the wearing parts of Stone Breaking
and Ore Crushing Machinery, Tramway Track Work, etc.

Head Office for South Africa:
46 & 47, CULLINAN BUILDINGS,
JOHANNESBURG.
'Phone 5900. Tel. Add.: "Hecla."

Bulawayo Agents:
WHITMORE & JACKSON,
17 & 18, Agency Chambers.

Salisbury Agents:
P. PEECH & CO.,
Angwa Street.

Natal Agents:
THOMAS BARLOW & SONS,
Smith Street, Durban.

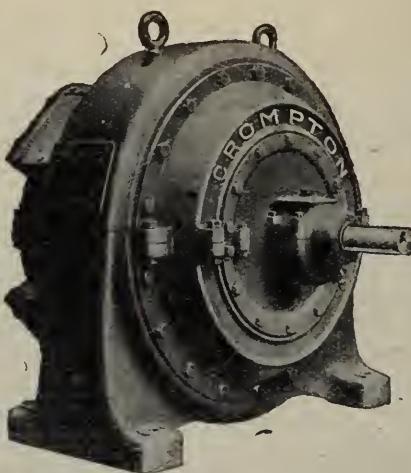
Complete Stone Breaking and Ore Crushing Plants

Electric Power in Mines.

WE are in an exceptional position to supply and install Complete Plants for the Electrification of Mines. We have on our staff Expert Engineers who have successfully equipped and reorganised the power arrangements of some of the largest mines in the world.

We Manufacture:

ALTERNATORS, DYNAMOS, MOTORS, SWITCH-GEAR, ARC LAMPS, SEARCHLIGHT PROJECTORS FOR SURFACE MINING, INSTRUMENTS, PRINTING PRESS CONTROLLERS, &c., &c.



Write us your requirements; and we will advise you as to the best means of meeting them.

CROMPTON & C^o LTD

SALISBURY HOUSE, LONDON WALL, LONDON,
ENGLAND.

Works: CHELMSFORD, ENGLAND.

Agents: S. SYKES & Co., Ltd., P.O. Box 2303, Southern Life Buildings, JOHANNESBURG.

140s. per 100 lbs.; floor brads, 52s. 6d.; ceiling, 47s. 6d.; wire nails, 47s. 6d. to 55s. per 100lb.; locks, rim, 66s.; mortice, 70s. per dozen; steel coilings, 75s. to 80s.; roofing material, 1 ply, 35s.; 2 ply, 45s.; and 3-ply, 47s. 6d. per roll.

Bricks, cement, lime, etc.: Pretoria Portland Cement, 9s. 3d. per bag; 8s. 3d. truck loads; lime, white, unslaked, 7s.; truck loads, 6s.; slaked, do., 5s.; blue 3s. 6d.; plaster lime, 4s. 6d.; bricks, stock delivered, 50s. to 55s.; wire cuts, 55s. to 70s.; pressed, 70s. to 80s. per 1,000; road transport difficult to obtain; salt and white glazed bricks, £35 per 1,000; roofing tiles, £15 to £27½ per 1,000; glazed tiles, 10s. 6d. to 17s. 6d. per yard; paving cement tiles, 8s. 6d. per yard laid; reinforced concrete columns, 6 ft. plain, 22s. 6d.; fluted, 24s.; fireclay bricks, £7½ to £9½, at kiln, per 1,000; clay chimney pots, 36s. to 70s., according to height, 12 in. to 18 in., per doz.; fire clay, 37s. 6d. per ton on rail.

Oils, paints, lead, oxide, glass: Linseed, raw and boiled, 52s. 6d. to 55s. per five gallons; white lead, 1s. 3d. per lb. (big lots not quoted); turpentine, 57s. 6d. 2/4 1-5 gals.; 10/1, 5/6 Imperial tins, 63s. 6d.; oxide in oil, 40s. per 100lb.; dry oxide, 26s. 6d. to 27s. 6d.; linseed oil patty, all at 7d. lb.; paints in tins, 1s. 1d. to 1s. 3d. lb.; British plateglass, 4in., 4s. 6d. to 5s.; do, mirror, 5s. 6d.; window, 16oz., 1s. to 1s. 3d. per foot.

Grease, imported, A.F. axle, £30 to £30; local, £24 to £26 per ton; tallow (local), 6d. per lb.; White Rose paraffin, 18s. 4d. 2/4; Laurel paraffin, 18s. 1d.; petrol, 35s. to 35s. 6d. 2/4 I.M.P.; motor oil, 6s. 6d. to 7s. 6d. per gallon; engine lubricating oils, 27s. to 40s. per case; cylinder, 28s. 6d. to 42s. 6d.

Chemicals: Mercury, £55 to £60 per 75lb. bottle last sale, but now no definite price; bichromate potash, 5s. 6d. lb.; chlorate, 4s. 6d. per lb.; permanganate, 14s. lb.; alum, 6d. lb.; carbolic acid, 7s. 6d. lb.;

borax, 92s. 6d. 100 lbs., cyanide soda, 1s. 5d. lb.; hypo, 9d. 1b.; acetate lead, 77s. 6d. 100lbs.; litharge (assay), 70s. to 72s. 6d. (one commercial), 58s. 6d. 100lbs.; zinc sheets and blocks, 1s. 9d. lb.; plumbago crucibles, 5d. per number.

Electrical goods: Lamps, high volts, British, Holland, and American, 30s. wholesale, and 54s. dozen retail; carbon lamps, 12s. 6d. dozen; pure rubber flex, 6d. to 8d. per yard; 3/20 coils of wire, 33s. to 35s.; do., 3/22, 23s. 6d.; tubing, 18s. to 20s. 100 ft.; keyholders, 6s. to 7s. 6d. each, round blocks, 3½in., 4s. dozen; lamp holder cord grips, 13s. 6d. to 15s. per dozen; switches, 5 amp., 42s. to 48s. per dozen; British glass shades, 30s. to 40s. dozen; porcelain shackles, 15s. to 18s. dozen; do., bobbins, 15s. to 25s. per 100; cleats, 22s. per 100; P.O. insulators, 18s.; motor, 3 h.p., about £35 to £37, new.

Iron, imported, 4in. and 5in. round, 60s. to 65s. per 100 lb.; 5in. round, 60s. to 65s. 100lb.; 5in. round, 37s. 6d. to 40s. 100lb.; 5in. upwards, round, 32s. 6d. to 35s. per 100lb.; square iron, 3½in. per 100lb.; flat iron, small shoeing sizes, 45s. to 50s.; flat, average width and thickness, 28s. 6d. to 30s.; round iron, local, 5in. upwards, 25s. 6d. per 100lb.; square iron, local, 5in. upwards, 25s. 5d. per 100lb.; flat iron, average widths and thickness, 25s. 6d.; mild steel bar, 52d. per lb.; drill, 1s. per lb.; steel plates, 60s. to 67s. 6d.; some sizes unobtainable; hexagon and cuphead bolts, 5in. diameter, 2s. per lb.; 5-16in. diameter, 1s. 9d. per lb.; 5in. diameter up to 3in. long, 1s. 3d. lb.; 5in. dia., 11d., 3½in. and up long, 1s. lb.; 5in. dia. up to 2½in. long, 70s. 100lb.; 5in. dia. and 2½in. up long, 70s. per 100lb.; 5in. diameter up to 2½in. long, 57s. 6d. per 100lb.; 5in. dia., 2½in. and up long, 55s. per 100lb.; 5in. diameter, 2½in. and up long, 50s. 100 lbs.; 5in. and 1in. dia., same price as 5in.

TUBE MILLS FOR SALE.

Two 14' 6" x 3' 6" Giesicke Tube Mills, complete, in first class condition. For particulars and price apply to—

"TUBE MILLS,"
Box 2359, JOHANNESBURG.

COPPIN & LLOYD, 182 & 184, FOX ST., JOHANNESBURG.
MACHINERY MERCHANTS & DEALERS.

The Firm who always have their finger on the Pulse of the Market.
We Specialise in your needs—therefore consult us.

Box 2823.

Tel. Add.: "INTEREST."

Phone 1 968

THERE'S NO SHORTAGE OF TRUCKS at BARTLES

In spite of the great and serious truck-shortage of to-day, Bartles can, because of the very large stocks they have on hand, still quote the best of prices—for immediate deliveries.

The illustration shows the well known McLachlan Truck. Obtainable in three sizes—10, 16 or 20 cubic feet, oval frame, U or V shape pans.
— May we send you catalogues? —

We shall also be glad to have inquiries regarding our centre-beam Trucks.

BARTLES

BARTLE & CO., LTD., Box 2466; 'Phones, 3553/4; Wires, "Faggot."

LOVEDAY HOUSE.

JOHANNESBURG.



HEAD, WRIGHTSON & CO. (South Africa), LTD.

(INCORPORATED IN ENGLAND).

Manufacturers of Mining Machinery,
Structural Steelwork, Tanks, Castings,

ETC.

PIONEERS OF THE 'NISSEN' STAMP ON THE RAND.

128 Nissen Stamps
installed on
the
Rhodesian Gold
Fields.

100 Nissen Stamps
erected on
the
Witwatersrand
and
Barberton Areas.



Highest Stamp Duty
with
Lowest Power
and
Maintenance Costs.

Economical
from first to last.

The Gravity Stamp
of
perfect design.

FULL PARTICULARS AND QUOTATIONS

FROM OUR JOHANNESBURG OFFICE:—

47-48, Standard Bank Chambers,

Commissioner Street,

JOHANNESBURG.

P.O. Box 1034.

Telephone 3524.

Telegrams: "HEDRITT," Johannesburg.

Agencies in BULAWAYO, SALISBURY, GATOOMA, DURBAN, LOURENCO MARQUES.

diameter; nuts, $\frac{1}{2}$ in., 1s. 3d. per lb.; $\frac{1}{4}$ in., 72s. 6d.; $\frac{1}{8}$ in. to 1 $\frac{1}{2}$ in., 70s.; 1 $\frac{1}{2}$ in. and 1 $\frac{3}{4}$ in., 75s.; 1 $\frac{1}{2}$ in. to 1 $\frac{3}{4}$ in., 75s.; 2 in. up, 85s.; washers, all sizes, 45s.; rivets, 3-16in., 1s. 6d. lb.; $\frac{1}{4}$ in., 5-16in., 1s. 3d. lb.; 7-16in., $\frac{1}{2}$ in., 1s. lb.; $\frac{1}{4}$ in., 10d. lb.; $\frac{1}{8}$ in., 55s.; $\frac{1}{4}$ in. up, 52s. 6d. 100 lb.; shoes and dies, 32s. 6d. to 35s., 100lb.; rails, £25 per ton; picks, 4lb., 40s. per dozen; shovels, 55s. to 60s. per dozen; drill hammers, 5d. to 6d. per lb.; hammer handles (best American), 14in., 3s. 6d.; 24in., 7s.; 30in., 9s. 6d.; 36in., 13s. per dozen; metal, anti-friction, 1s. per lb.

In consequence of the daily, and even hourly, variation in prices, the Editor will answer reply-paid telegrams to verify any quotation in our list.

New Patents.

507. The British United Shoe Machinery (South Africa), Ltd.—Improvements in or relating to methods of and machines for conforming uppers of boots and shoes to lasts.

508. The British United Shoe Machinery (South Africa), Ltd.—Improvements in or relating to button-hole sewing or other sewing machines.

509. William George Gibson.—A machine for scraping and dressing battery plates and the like.

510. Mauricio Lelilanc.—Improvements in ejectors.

511. Oscar Fredrik Svante Carlson.—Method of manufacturing nitro-compounds from carbides.

512. George Robert Nicholson and Albert Beresford Horsley.—Improvements relating to syphons.

513. Frank William Duffet.—An improved process for making inert raw mineral phosphates soluble and available as phosphatic fertiliser.

514. The Associated Fire Alarms, Ltd.—Improvements in automatic fire alarm systems.

515. Gilbert Kemp.—Reptile, vermin and dust excluders.

516. John William Smith.—The hand shower brush.

517. William Birrell and James Birrell.—Telephone transmitter.

518. Henry Kingsford Harris.—Improvements in advertising and other devices, provided with parts adapted to be brought into successive positions.

519. Robert Emmott.—Improvements in crushing, pulverising or disintegrating machines.

520. Wohle Mineral Oil Products (1910), Ltd.—Improvements in petroleum and other hydrocarbon oils.

521. Wilhelm Mauss.—Improvements in centrifugal filters and the like.

522. Norman Blythe Braly.—Air hose suspending device.

523. Harold Moore and Charles Day.—Improvements in continuous stills for coal tar, mineral oils and similar products.

524. Anthony John Plummer Thomas and Wm. Herbert Veal.—An improved dolly support and guide for the Leyner drill sharpening machine.

525. Henry Nesbitt.—Torpedo and mine protector.

526. John Athelstan Parsons.—Improvements in cupolas and other shaft furnaces.

527. William Duff Reid.—Improvements in carburettor apparatus for internal combustion engines.

528. Alexander Gemmell.—Improvements in deep well pumps and the like.

FOR SALE.

One 15 B.H.P. Gardner Engine.
One 5" Rotary Pump.
Quantity 5" Black Steel Piping.

Full particulars from—

HARTLEY & CO.,
QUEENSTOWN.

Box 2127.

Established 1892.

Phone 217.

GEO. McINNES,

S.W. COR., MARSHALL SQUARE, OPPOSITE CHARGE OFFICE.
Has the largest and finest stock on the Rand of Electrical Goods imported regularly by every mail from England.

To Inventors, Engineers, etc.

Messrs. T. G. BEATLEY & SON

(Sole Partner—Thomas Ernest Brooke),

57 & 58, LEADENHALL STREET, LONDON, E.C.3,

offer 1,000 guineas

to any person of British or Allied Nationality and Origin who in the opinion and to the satisfaction of that firm invents and produces the best appliance or device for increasing the speed of steamers at a moderate cost.

(Proposals to be marked "Speed.")

The Principal of T. G. Beatley & Son to be the sole judge of the merits and suitability of the inventions, and his decision shall be final, binding, and unassailable in any Court.

The above-mentioned firm to have the first option of acquiring the world rights of the inventions if accepted at a price to be agreed on. The above sums of 1,000 guineas respectively, or proportion thereof, as above, shall not in any case be payable unless the rights are acquired by T. G. Beatley & Son.

Proposals accompanied by complete particulars of suggested appliances or devices, if of "prima facie" utility, will be considered by T. G. Beatley & Son, but they do not bind themselves to accept any of them.

offer 1,000 guineas

to any person of British or Allied Nationality and Origin who in the opinion and to the satisfaction of that firm invents and produces the best appliances or devices for the rapid and efficient loading and discharging of Timber, Coal, Iron-ore and General Cargoes, capable of being applied at moderate cost to the ordinary type of steamer now in use, or a proportion of that sum in the case of an invention applicable to one species of cargo only.

(Proposals to be marked "Cargo Appliances.")

This offer to hold good until the end of the year 1918.

Company Meetings.

KNIGHTS DEEP, LTD.

The 19th ordinary general meeting of shareholders in the Knights Deep, Limited, was held in the board-room of the Consolidated Gold Fields Buildings on October 30th.

Mr. D. Christopherson presided, and among those present were Messrs. D. W. Rossiter, J. E. Kent, R. O. Stone, H. H. Oldroyd, A. G. Gill, A. E. C. Hocking, and A. C. Grant (secretary).

There were represented, personally and by proxy, 306,830 shares out of an issued capital of £743,526.

The Chairman, in moving the adoption of the report and accounts, said:—From the report and accounts which are before you it will be seen that for the year ended July 31, 1917, a nett amount of £76,740 was carried to the appropriation account, which with the balance of £160,084 at July 31, 1916, made the total on the credit side of that account £236,824. From this amount two dividends, equal in all to 15 per cent., were declared for the year under review, absorbing £111,529. I do not propose to deal in detail with the balance sheet, as there is little contained therein which calls for comment. I might, however, draw your attention to the footnote in the balance sheet stating it is estimated that no Union taxation is due and payable in respect of the year ended July 31, 1917. That position arises through three causes:—(1) The considerably reduced profit from gold mining operations during the year under review—a matter I will deal with later on. (2) The annual allowance in respect of the unamortised balance remaining at the end of the previous year, on account of capital expenditure, and which has first of all to be deducted from any mining profits before arriving at the taxable amount. And (3)—and most important—the fact that the dividends paid by your company last year (the first period in which the recently-enacted 10 per cent. dividend tax applied) were really provided out of unappropriated balances of previous years, and which had already been subject to the then existing taxation Acts; so that, as we understand the position under the new taxation legislation, until these unappropriated balances are absorbed dividend tax is not payable in so far as dividends are provided for out of such amounts.

The Year's Operations.

Coming now to the operations of your company for the past year, as compared with the previous 12 months. The tonnage milled is down by 110,800 tons, revenue by 4,884d. per ton, while working costs were higher by 1s. 0.758d., so that the declared profit was less by £104,728 17s. 6d., or 1s. 5.642d. per ton milled. Moreover, during the past year 2,186 ounces fine gold, valued at £9,108 6s. 8d., were taken from reserve. Taking the actual results, the drop in profits last year was £121,943 14s. 8d. The main causes which have brought about these results may briefly be stated to be—(a) Shortage of native labour and skilled miners; (b) high cost of stores and materials; (c) slight drop in grade of ore going to mill; and (d) accidents, minor and otherwise. The adverse effect of all these factors, and especially the penalties due to war conditions, has been severely felt. Your consulting engineer, Mr. C. D. Leslie, points out in his report that this mine is dependent for its normally small margin of profit upon a high tonnage and low operating costs. To deal with a high tonnage obviously a good supply of native labour is essential, and the following figures show how we have suffered in this respect. During the previous year, viz., to the 31st July, 1916, our average native labour underground complement was 5,341 and the average number of boys employed was 5,362, equal to just over 100 per cent. For the year under review, however, during which the average underground complement was

5,472, the average number of underground boys was 4,833 or 88.32 per cent. In fact, during the last seven months of the year the average was only 85.59 per cent., while at the end of July last it was still lower, viz., 82.67 per cent. and the number of boys employed was about 1,200 less than eighteen months ago. It should be borne in mind that a shortage of native labour, even though comparatively speaking it may not be a great shortage, nevertheless seriously handicaps a low grade mine such as yours, with so narrow a margin of payability, to a far greater extent than mines not so circumstanced, and when the percentage of complement falls below 85 per cent. it becomes a really serious matter. In September last our underground native labour complement was raised from 5,557 to 6,143, an increase of 586 boys, and already we have to record an increase since then of 240 in the number of underground boys employed.

Low Grade Propositions.

I wish again to emphasise that this mine is dependent on putting through a large tonnage, and past experience indicates that to work profitably, at least 105,000 to 108,000 tons per month must be put through the mill. As to the possibilities of a low grade proposition being worked profitably on these fields, the results obtained by this mine for August last are instructive. Owing to an insufficient labour supply only 98,600 tons were crushed, the grade of ore going to the mill was exceptionally low, viz., 3,359 dwts. mill grade and the loss on working was £3,250. Mr. Powell, the superintending engineer, and Mr. Chalkley, the manager, are satisfied that had 108,000 tons of ore been crushed the loss of £3,250 would have been eliminated and a small profit shown. The reason for this is that the extra cost of hoisting and treating the additional 10,000 tons over and above the 98,600 spread over the month would be so small (owing to no more white labour being required and extremely small additional charges for power, etc.), that the margin for profit on this extra 10,000 tons is much greater than for the rest of the tonnage. In addition to this, Mr. Leslie, your consulting engineer, estimates that abnormal conditions are costing the Knights Deep £7,000 a month. This does not appear to be an extravagant estimate, seeing that the increase in the cost of stores, war bonuses, allowances to men in the field and their dependents, the higher cost of gold realisation, amount to over £6,000 a month, thus leaving only £1,000 a month on Mr. Leslie's estimate for all the other disadvantages, especially for inefficiency among the workers due to so many experienced men being away on active service. Thus, under normal conditions, the Knights Deep for August last would have made a profit even on the reduced tonnage crushed of 98,600 tons, despite the very low milling grade of 3,359 dwts., and considerably more had it been possible to put through a larger tonnage. On the other hand, it is necessary to remember that it is impossible to estimate how long it will take, even after the conclusion of the war, before normal conditions, as obtaining before the outbreak of the war, will again be reached. Consequently the outlook for the near future for such low grade propositions as the Knights Deep must be considered as very uncertain especially if an ample supply of native labour is not forthcoming.

An Encouraging Feature.

Working costs for last year increased to the extent already stated, but nevertheless it must be admitted that the figure

of 13s. 3d. per ton milled is under all the circumstances quite satisfactory and the relatively small rise of 1s. 1½d. per ton as compared with that for the year immediately preceding the outbreak of war is eloquent evidence of economies having been effected, and for which due credit must be given to the mine management. It is a matter of hopeful encouragement for the future of this industry (under normal conditions) to find in these days, despite so many adverse factors operating against advantageous working, that it is possible with your mine to make any profit at all with rock, the recovery value of which for the past year was under 14s. 10d. per ton. As regards the grade of ore, you will notice that the consulting engineer in his report points out that the position especially during the latter half of the year was affected unfavourably by a decline in the grade of ore milled, but it is hoped that some improvement will shortly take place. The management of the mine is taking every care to exclude unpayable ore and waste, and no effort is spared to obtain as good a grade as possible. The declared working profit for the year ended July 31, 1916, was 3s. 0.339d. per ton, whereas for the past year it was only 1s. 6.697d. per ton (the actual figures, i.e., excluding gold declared from reserve, being 3s. 1.827d. and 1s. 4.870d. respectively). But for the last six months of the past financial year the total working profit was only £11,594, equal to 4.963d. per ton, whilst taking the operations for the past eight months, viz., to September 30, 1917, the working profit averaged only 2.804d. per ton. Shareholders will, therefore, readily appreciate how small a margin of profit we have latterly been working upon, and it must be borne in mind that from the working profit figures provision has, in addition, to be made for capital expenditure, levies under Miners' Phthisis Compensation Fund, expenditure due to war, taxation charges, depreciation, etc., etc., all of which for the past year amounted to an average of about £1,300 per month, after allowing for the partial offset by reason of sundry revenue. As already remarked, while no taxation is estimated to be payable in respect of the past year, yet in future years it obviously will be leviable, if reasonable profits are made.

A Serious Position.

It is becoming increasingly evident that the steady rise in the working costs of low grade gold mines of the Rand (and which, owing very largely to war conditions, are still increasing) threatens to render such mines unprofitable, and hence cause them to shut down before long unless relief is forthcoming in one way or another. The effect of shutting down such mines will be:—

(a) Not only loss to shareholders, especially in view of the large amount it would cost to reopen these mines, but very serious, and even disastrous, results to the Rand in particular, and to South Africa in general, as such low grade mines as the Knights Deep are, from the point of view of their expenditure in wages, stores, etc., of as equally great value to the country as rich mines.

(b) The discharge of several thousand white employees, which in turn, since it is calculated that each worker supports, directly and indirectly, about eight other white persons on the Rand, will involve a loss of livelihood of about one-fourth of the Rand population. Such an economic and social crisis is therefore liable to be of a very serious nature.

(c) The loss of the very large market for mining supplies and produce from all parts of South Africa which these large low grade mines at present afford.

(d) The total loss to Government of the taxation, chiefly indirect through Customs and railways which these mines are contributing through various channels, including that of a proportion of the wages paid to employees.

(e) The cessation of the production of gold as an Imperial requirement under existing conditions, although this might possibly be offset to some extent by increased production on higher grade mines.

(f) The transfer of the natives employed with a limited amount of the white labour to richer mines, which individually would benefit.

Taxation of the Mines.

It has been pointed out in the third interim report of the Dominions Royal Commission (1914) that the Rand then contributed through various channels £12,000,000 yearly to the Union's revenue, equivalent to about 9s. 3d. per ton of ore milled. It is necessary to note that the Government revenue from gold mines under the previously existing Profits Tax Act amounted for the Government's financial years ended March 31, 1912, 1913, and 1914 respectively to a little over £1,000,000 for each year, so that of the £12,000,000 above referred to approximately £11,000,000 came into the country's revenue chiefly from indirect sources of taxation, such as railway and dock charges, Customs duties, claim licences, native pass fees, etc., etc., and as this indirect taxation was practically in proportion to the tonnage milled it must obviously be, relatively speaking, a far heavier burden on the lower grade mines, where profitable working is dependent on milling large tonnages rather than on higher grade mines. In other words, those mines which return shareholders least pay most per ounce of gold recovered in taxes to the State, instead of the reverse which should be the case. It is a fact that a poor mine pays wages and indirect taxation, and consumes supplies and maintains its workers in the same way as does a rich property in proportion to its scale of operations. For instance, a mine crushing ore under 4 dwts. per ton contributes relatively more than half as much again in direct taxation included in working costs per ounce of gold recovered as does a $7\frac{1}{2}$ dwts. mine working on an equal tonnage basis. In order that you may have a concrete example and be able closely to follow this contention I give some figures in regard to two assumed gold mines, one having a recovery of say 4.75 dwts. per ton and the other having a recovery of say 7.5 dwts. per ton. It is, of course, assumed that both mines crush the same tonnage, viz.: one and a half million tons per annum, that their conditions of working are precisely similar, costs being the same, as well as stores consumed and a similar labour force employed, so that the amount of indirect taxation borne would be approximately the same in both cases. The annual figures would be:—

| | In respect of the 4.75 dwt. mine. | In respect of the 7.5 dwt. mine. |
|---|-----------------------------------|----------------------------------|
| Total profit | £346,900 | £1,406,250 |
| Yield of gold in fine ozs. | 356,250 | 562,500 |
| Indirect taxation, say | £100,000 | £100,000 |
| Amount of indirect taxation per fine oz. of gold produced | 5.614s. | 3.556s. |

It will thus be seen that the indirect taxation of the low grade mine per fine ounce of gold recovered would be nearly 58 per cent greater than that of the higher grade mine.

The State's Exactions.

It was found from figures which were carefully taken out at the time that the Knights Deep during the year ended the 31st of July, 1916, paid to the Union

Government by way of direct and indirect revenue £98,328, equal to 1s. 6d. per ton crushed, or half as much as its working profit of 3s. per ton during that period. During the first half of the year ended the 31st of July, 1917, your company's working profit was only 9d. per ton milled, so that the above taxation of 1s. 6d. per ton milled amounted to 200 per cent on the working profit per ton, and even allowing that during your company's last financial year no taxation in respect of profits and dividends is estimated as leviable, for the reasons already stated, the elimination of such taxation would be, comparatively speaking, a somewhat small item because during the year ended the 31st July, 1916, it only amounted to £13,221 and thus represented only 2.427d. per ton milled out of the 1s. 6d. above referred to. If the serious results, which now face a quarter of the working mines on the Rand, including your company, are to be avoided, it is essential that some relief be found in the way of lightening the unduly burdensome indirect taxation which presses so heavily upon them as to threaten their total extinction as tax-payers, as employers of labour, and as purchasers of South African mining supplies and produce. To emphasise still further the importance of the Knights Deep Mine continuing its operations I would point out that at the present time it employs about 750 whites and 6,200 natives and that during the year ended the 31st of July, 1917, it spent by way of working costs £793,080 distributed as follows:—

| | |
|--------------|----------|
| White wages | £216,428 |
| Native wages | 163,953 |
| Stores | 325,488 |
| Sundries | 87,215 |
| Total | £793,080 |

I can assure you, gentlemen, that although the position of the Knights Deep is causing anxiety owing to the low grade of ore we have to deal with, being especially burdened by war conditions and indirect taxation, those responsible for the working of the mine are making, and will continue to make, every endeavour to carry on operations at a profit. If all our efforts prove unsuccessful, then, from what I have already stated, you yourselves will realise that the position will be serious not only to shareholders and to our employees, but also to the community. It is therefore to be earnestly hoped that the Government will consider ways and means whereby some relief may be given to low-grade mines, at any rate during the period of the war and for such time thereafter as war conditions may continue to operate.

The Roll of Honour.

I very much regret to say that since I addressed you a year ago further casualties have been reported in respect of the company's employees at various fronts, namely, 8 killed or died, 10 wounded, and 1 missing, the names being as follows:—Killed or died: Sergt. Hugh Keys (previously reported missing), Corp. A. H. Friedlander, Pte. S. B. Brown (previously wounded), Pte. D. W. McDonald (previously wounded), Pte. Frank Davis, Pte. Alex. Clark (previously wounded), Pte. W. F. Lawrence, Pte. H. Crockett.

Wounded: Major E. H. Tamplin, Lieut. J. H. Roberts, Lance-Corp. F. C. Welton (twice wounded), Pte. W. Brodie, Pte. S. H. Johns, Pte. A. L. Walker, Pte. A. Foreman, Pte. T. M. Duffy, Pte. G. H. Bath, Pte. W. H. Baker.

Missing: Pte. H. B. Ogilvie.

On behalf of the board of directors I have already conveyed since sympathy with the families and relatives of those men who have laid down their lives for our cause and for the cause of our children, and I am sure you will join me not only therein, but also in wishing a speedy recovery for the wounded men. It is with gratification that I have to record that

two of our employees have had honour bestowed upon them while on a tour of service, viz., Sergt. G. F. Dexter (Distinguished Conduct Medal) and Rfman W. H. Baker (wounded, Military Medal). The total number of your employees who have enlisted since the outbreak of the war is 221, of whom 116 were still on active service at the end of the financial year. At the early part of this year Mr. O. P. Powell, who previously has had an intimate practical experience of your property, was appointed superintending engineer in place of Mr. C. D. Leslie, who became consulting engineer. To these gentlemen our thanks are extended, and I desire again to express appreciation of the services of Mr. Chalkley, the manager, and also of the underground and surface staffs, who have had a very strenuous year under difficult and trying conditions.

The report and accounts were adopted.

The appointment of Mr. A. G. Gill as a director in the place of Mr. W. H. Dawe, who resigned, was confirmed. Mr. D. Christpherson and Lieut. Col. F. Leslie-Brown, D.S.O., were re-elected directors, and Messrs. Douglas, Low and Co., and Mr. Chas. Stewart were reappointed auditors.

VICTORIA FALLS AND TRANSVAAL POWER CO., LTD.

The annual meeting was held in London on June 21, under the presidency of Mr. Arthur E. Hadley.

The Chairman moved the adoption of the report, and, after dealing with the accounts, said that the power station's generating plant for electric power and compressed air had done successfully, and had been well maintained during the period under review. The overhead transmission and distributing lines, and the consumers' sub-station plant, together with the compressed air pipe-line, had been operated satisfactorily, and had been kept in a good state of repair. There had been no extension to the generating or distributing plant other than a small pole line extension to a new consumer in the Brakpan area, Sub Nigel, the capacity of the generating plant being 270,680 horse power. The quantity of water for condensing purposes accumulated in the dams at the various generating stations remained normal, and showed no sign of shortage. The prosperity of the company being so closely interwoven with that of the gold mining industry on the Rand, they had reason to follow with feelings of admiration the successful manner in which, in spite of the difficulties created by the war, the output of gold and the general activity of the mines had been maintained. The extra cost of materials, increased wages, taxation, and fluctuation in the supply of native labour imposed heavy burdens both on their consumers and on themselves, while neither of them were in a position to raise the price of their products. The foresight and energy displayed by those responsible for the conduct of the mines, assisted by the sympathetic attitude of the Imperial and Union Governments, had enabled those difficulties of obtaining the necessary materials to be overcome. Naturally war conditions were reflected in working costs, and were felt most severely by low-grade mines. Nevertheless, by good management those mines had been kept working, those which had shut down during the period under review having either come to an end of their ore, or having closed through causes normally incident to mining. Developments in the Far Eastern Rand, where several of their largest consumers were situated, continued to be satisfactory.

The report was adopted.

THE KNIGHTS DEEP, LIMITED

(Incorporated in the Transvaal.)

REPORT OF THE DIRECTORS

For the Year ended 31st July, 1917.

Submitted at the Nineteenth Ordinary General Meeting of Shareholders, held in the Board Room, Consolidated Gold Fields Buildings, Simmonds Street, Johannesburg, on Tuesday, 30th October, 1917, at 12 o'clock noon.

Gentlemen,—Your Directors beg to submit their Report, together with the Audited Accounts, for the year ended 31st July, 1917.

CAPITAL.

The Capital of the Company, which is unchanged, is £743,526, in 743,526 shares of £1 each, all of which have been issued fully paid.

PROPERTY.

The area of your Company's property, on which Claim Licences and Mynpacht Dues are paid, is equal to an area of 506,317 claims, of which 409,152 claims are held under Claim Licences and 97,165 claims under Mynpacht Title, and are situated partly on the farm Elandsfontein No. 11 and partly on the farm Driefontein No. 12.

It is estimated by the Consulting Engineer that the intact claim area at 31st July, 1917, was equivalent to 344,319 claims, and that, in addition, a considerable tonnage of ore is available as reclamation from areas already stopeed out.

OPERATIONS.

The Consulting Engineer's and Manager's Reports, which are attached, give a resume of the operations conducted at the mine during the period under review.

ACCOUNTS.

The profit on working for the year, after allowing for the expenditure of £587 4s. 0d. on renewals and replacements of Machinery, Plant, Buildings, etc., amounted to ... £93,214 1 0
Add—Interest, Rents, and Sundry Revenue 3,282 8 2

Making a gross profit of 96,496 9 2

Deduct—Contributions to the Miners' Phthisis Compensation Fund; Expenditure due to War; Debenture Trustees' Fees; Profits Tax underestimated for the year ended 31st July, 1916, and Sundry Amounts written off 19,756 4 6

Leaving a net profit carried to Appropriation Account of 76,740 4 8

Add—Balance at credit of Appropriation Account at 31st July, 1916 160,083 13 9

236,823 18 5

Out of which there has been appropriated:—

For Dividends Nos. 23 and 24 of 10 per cent. and 5 per cent. respectively declared during the year... £111,528 18 0

For Capital Expenditure 3,821 17 7

£115,350 15 7

For Fund for Additions to and Renewals of Machinery, Plant and Buildings £11,152 17 9

| | | | |
|--|---------|-------------|-------------|
| Less—Expenditure on renewals and replacements during the year and charged to Working Expenditure and Revenue Account . | 587 4 0 | 10,565 13 9 | 125,916 9 4 |
|--|---------|-------------|-------------|

| | |
|---|--------------|
| Leaving a balance at credit of Appropriation Account at 31st July, 1917, of | £110,907 9 1 |
|---|--------------|

INVESTMENTS.

Your investments and interests in other concerns, which stood in the books at 31st July, 1916, at £16,666 11s. 0d., now stand at £13,579 13s. 11d.

During the year 3,875 ordinary shares of the Victoria Falls and Transvaal Power Company, Limited, have been sold, and certain necessary adjustments have taken place in your Company's interests in the Witwatersrand Co-operative Smelting Works, Limited, and the Native Recruiting Corporation, Limited. A list of investments is shown in the Balance Sheet.

CAPITAL EXPENDITURE.

The amount expended during the year on equipment of property, including shaft sinking, was £16,666 9s. 2d.

DIRECTORATE.

You will be asked to confirm the appointment of Mr. A. G. Gill as a Director of the Company in the place of Mr. W. H. Dawe, resigned, and to appoint two Directors in the places of Mr. D. Christopherson and Lieut.-Colonel F. Leslie Brown, D.S.O., who retire by rotation, but are eligible and offer themselves for re-election.

AUDITORS.

It will be necessary to elect two Auditors in the places of Messrs. Douglas, Low and Co. and Mr. Chas. Stuart, who retire in accordance with the provisions of the Articles of Association, but are eligible and offer themselves for re-election, and to fix the remuneration for the past year's audit.

GENERAL.

Mr. G. A. Chalkley continued to act as the Manager of the Company's mine during the past year, and your Directors wish to record their appreciation of the services rendered by him and his staff.

D. CHRISTOPHERSON (Chairman),
A. G. GILL, Directors.

THE CONSOLIDATED GOLD FIELDS OF SOUTH AFRICA, LIMITED,
Secretaries.

Per A. C. GRANT.
Johannesburg, 6th October, 1917.

The Knights Deep, Limited.—continued.

Dr

BALANCE SHEET AT 31st JULY, 1917.

Cr.

| | | |
|---|-----------------|---|
| To Capital— | | By Property at cost— |
| Issued Capital as per Balance Sheet at 31st July, 1916 : | | 506,317 Claims on farms Driefontein No. 12 and Elandsfontein No. 11, as per Balance Sheet at 31st July, 1916 |
| 743,526 Shares of £1 each, fully paid | £743,526 0 0 | £321,182 0 0 |
| " Reserve Account— | | " Expenditure to date on equipment of Property, less amounts written off— |
| As per Balance Sheet at 31st July, 1916 | 327,381 17 10 | Shaft sinking |
| " Revenue appropriated for redemption of Debentures and Capital Expenditure— | | Surface Plant |
| Amount as per Balance Sheet at 31st July, 1916 | £421,747 15 11 | Underground Plant |
| Add — Amount appropriated during the year for Capital Expenditure | 16,551 9 2 | Workshops and General Buildings |
| | 438,299 5 1 | Ore Reduction Plant |
| " Fund for Additions to and Renewals of Machinery, Plant and Buildings— | £1,509,207 2 11 | Roads and Surface Improvements |
| Amount appropriated during year | £11,152 17 9 | Water Purification Installation |
| Add—Amount received from Rose Deep, Ltd., in terms of Water Agreement, dated 9th December, 1915 | 5,000 0 0 | Sand-filling Plant |
| | 16,152 17 9 | Water-disposal Plant |
| Less—Charged to Working Expenditure and Revenue Account | 587 4 0 | Water-cooling arrangements |
| Written off for Additions during year | 12,729 11 7 | Metallurgical Department Laboratory |
| | 13,316 15 7 | 96 16 6 |
| " Consolidated Gold Fields of S.A. Ltd., London Loan Account | 2,836 2 2 | 1,188,025 2 11 |
| " Sundry Creditors— | | " £1,509,207 2 11 |
| Open Accounts for Wages, Stores and Sundries | 23,500 0 0 | " Survey Instruments |
| To Dividends and Debenture Interest unclaimed, including Debenture Bonds drawn for payment not yet presented, with accrued interest | 66,244 1 0 | " Livestock and Vehicles |
| " Balance from Appropriation Account | 2,994 2 0 | " Furniture |
| Contingent Liabilities— | | " Stores and Materials on hand |
| Amounts uncalled on Shares held— | | " Payments in advance— |
| 9s. 6d. per share on 3,203 Witwatersrand Co-operative Smelting Works, Ltd., shares | £1,521 8 6 | Native Labour Recruiting Expenses |
| 8s. per share on 1,480 Witwatersrand Native Labour Association, Ltd., shares | 592 0 0 | £3,963 0 8 |
| Native Recruiting Corporation, Ltd. Deposit Account—15s. per native uncalled on complement of 7,228 natives | 5,421 0 0 | Licences, Insurance and sundries |
| Rose Deep, Limited— | | Advances on account of Machinery orders |
| Contingent liability under agreement dated 9th December, 1915, having reference to the pumping of mine water. | £7,534 8 6 | 534 12 11 |
| NOTE.—It is estimated that no Income Tax is due and payable in respect of the year ended 31st July, 1917. | £1,715,688 17 2 | 6,763 4 5 |
| | | " Investments and Interests in other concerns (at or under cost)— |
| | | 11,114 Shares of £1 each in Breyten Collieries, Ltd. (fully paid) |
| | | 8,980 4 6 |
| | | 1,480 Shares of £1 each in Witwatersrand Native Labour Association, Ltd. (12s. paid) |
| | | 888 0 0 |
| | | 3,203 Shares of £1 each in Witwatersrand Co-operative Smelting Works, Ltd. (10s. 6d. paid) |
| | | 1,607 3 6 |
| | | 69 Shares of £1 each in Native Recruiting Corporation, Ltd. (fully paid) |
| | | 69 0 0 |
| | | 200 Shares of £1 each in Rose Deep, Ltd. (fully paid) |
| | | 228 5 11 |
| | | Amount advanced to Native Recruiting Corporation, Ltd.—being deposit of 5s. each on total complement of 7,228 natives, being part of total liability under agreement of £1 per native |
| | | 1,807 0 0 |
| | | 13,579 13 11 |
| | | " Sundry Debtors |
| | | 16,346 3 2 |
| | | " Gold in transit |
| | | 30,873 4 7 |
| | | " Cash at Bankers, London and Johannesburg— |
| | | For Dividends and Debenture Interest unclaimed, including provision for unpaid Debenture Bonds drawn for payment, with accrued interest |
| | | 2,994 1 5 |
| | | " Cash— |
| | | At Bankers, London, Johannesburg, and Germiston, and on hand at Mine |
| | | 4,685 1 9 |
| | | £1,715,688 17 2 |

THE CONSOLIDATED GOLD FIELDS OF SOUTH AFRICA, LIMITED,
Secretaries.
per A. C. GRANT.

To the Shareholders of
THE KNIGHTS DEEP, LIMITED.

REPORT.

D. CHRISTOPHERSON (Chairman).
A. G. GILL.

Directors.

We report that we have examined the above Balance Sheet with the books and vouchers of the Company in Johannesburg for the year ended 31st July, 1917, in which have been incorporated the audited accounts received from London, and have obtained all the information and explanations we have required as Auditors. In our opinion such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us, and as shown by the books of the Company.

DOUGLAS, LOW & CO.
(Incorporated Accountants).

CHAS. STUART
(Chartered Accountant).

Auditors.

The Knights Deep, Limited.—continued.

Dr. Working Expenditure and Revenue Account for the Year ended 31st July, 1917. Cr.

| | | | |
|--|---------------|-----------------|---------------|
| To Mining Expenses— | | By Gold Account | £886,294 10 5 |
| Mining and Pumping | | | |
| £507,634 0 6 | | | |
| Development 25,741 1 10 | £533,375 2 4 | | |
| ,, Reduction Expenses— | | | |
| Breaking, Sorting, and Transport of Ore | 34,458 19 6 | | |
| Milling Expenses | 54,340 15 4 | | |
| Tube Milling Expenses | 35,393 13 10 | | |
| Cyaniding Sand Expenses | 45,680 11 10 | | |
| Cyaniding Slime Expenses | 35,907 3 8 | | |
| | 205,781 4 2 | | |
| ,, General Expenses—Mine | 43,829 8 4 | | |
| ,, Expenditure on Renewals and Replacements of Machinery, Plant, and Buildings | 587 4 0 | | |
| ,, Head, London, and Paris Offices' Expenses | 9,507 10 7 | | |
| | 793,080 9 5 | | |
| ,, Balance, being Profit on Working, carried down | 93,214 1 0 | | |
| | £886,294 10 5 | | £886,294 10 5 |

| | | | |
|--|-------------|--------------------------------------|-------------|
| To Miners' Phthisis Compensation Fund— | | By Balance brought down | £93,214 1 0 |
| Levies under Miners' Phthisis Act for year ended 31st July, 1917 | £7,474 11 1 | ,, Rents received, less maintenance | £796 5 11 |
| ,, Expenditure due to war | 11,042 16 5 | ,, Interest, Commission and Exchange | 1,191 18 11 |
| ,, Amounts written off for depreciation on Livestock, Vehicles, Furniture, Machinery for Sale, etc., less sundry credits | 918 11 5 | ,, Sundry Revenue | 1,294 3 4 |
| ,, Debenture Trustees' Fees | 200 0 0 | | 3,282 8 2 |
| ,, Profits Tax— | | | |
| Amount under-estimated for the year ended 31st July, 1916 | 120 5 7 | | |
| | £19,756 4 6 | | |
| ,, Balance carried to Appropriation Account | 76,740 4 8 | | |
| | £96,496 9 2 | | £96,496 9 2 |

Dr. Appropriation Account. Cr.

| | | | |
|---|---------------|--|---------------|
| To Revenue appropriated for Capital Expenditure— | | By Balance at 31st July, 1916 | £160,083 13 9 |
| Expenditure on shaft sinking during year | £3,821 17 7 | ,, Balance from Working Expenditure and Revenue Account for the year ended 31st July, 1917 | 76,740 4 8 |
| ,, Dividends— | | | |
| Dividend No. 23 of 10 per cent., declared 18th December, 1916 | £74,352 12 0 | | |
| Dividend No. 24 of 5 per cent., declared 28th June, 1917 | 37,176 6 0 | | |
| | 111,528 18 0 | | |
| ,, Fund for Additions to and Renewals of Machinery, Plant and Buildings— | | | |
| Further provision as voted— amount equal to 10 per cent. of Dividends Nos. 23 and 24 | 11,152 17 9 | | |
| Less—Amounts expended on Renewals and Replacements and charged to Working Expenditure and Revenue Account, as above | 587 4 0 | | |
| | 10,565 13 9 | | |
| ,, Balance carried to Balance Sheet | 110,907 9 1 | | |
| | £236,823 18 5 | | £236,823 18 5 |

SIXTEEN BUTTERS' FILTER PLANTS

AND FOUR EXTENSIONS TO FORMER PLANTS

now operating on the Rand and giving complete satisfaction to everyone concerned.

Full particulars and operating data will be given on application.

50 lb. samples of slime will be tested free of charge to determine its filtering capacity. Estimates for plants, accompanied by complete general arrangement drawing, supplied on short notice. Write us for pamphlet regarding our process.

CHAS. BUTTERS & CO., LTD.

(INCORPORATED IN ENGLAND)

187, Exploration Building, Johannesburg.

P.O. Box 2652.

Telephone 3701.

Cable Address: "HUBNERITE."

FRASER & CHALMERS, LTD., AGENTS FOR SOUTH AFRICA.



DICK'S BELTING.

No Belt Is a

DICK'S ORIGINAL BALATA

**unless stamped every few feet
with the Trade Mark.**

**FACTORIES: GLASGOW, SCOTLAND.
PASSAIC, NEW JERSEY, U.S.A.**

SOLE AGENT—

S. P. Ruthven,
8, WINCHESTER HOUSE,
JOHANNESBURG.

BOX 2012.

PHONE BO.

TELEGRAMS: "BELTING."

EXPLOSIVES

For Mining, Quarrying, Farming, Railway and Irrigation Work.
"Permitted" Explosives for Coal Mines,

AGENTS:



LONDON.—CAPE EXPLOSIVES WORKS, LTD., 15, St. Swithin's Lane, E.C.

TRANSVAAL.—REUNERT & LENZ, LTD Box 92, Johannesburg.

RHODESIA.—L. R. FORBES, Box 683 Bulawayo, and Box 427, Salisbury

KIMBERLEY.—CAPE EXPLOSIVES WORKS LTD., & E. W. TARRY & CO., LTD.

AUSTRALASIA.—KIRK O'BRIEN, Collins House, Collins Street, MELBOURNE.

MANUFACTURERS of

Blasting Gelatin, Gelinates,
Ligdyn Dynamites,
"Cape Brand" Subsoil Dynamite
Fuse Igniters.

Bi-Sulphate of Soda.
Sulphuric and Nitric Acids.
Sulphur & Sulphur Lime Salts
Pure Glycerine.

Fuse, Detonators and Electric Blasting Accessories Stocked.
Nitrate of Soda.

CAPE EXPLOSIVES WORKS
LIMITED,
P.O. DYNAMITE FACTORY,
SOMERSET WEST, CAPE PROVINCE.

Ingersoll-Rand
Co.,
Exploration Bldg.,
JOHANNESBURG.

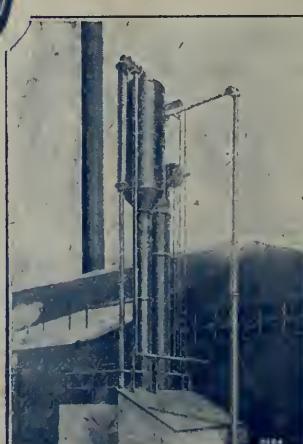
THE
**South African
MINING JOURNAL**
WITH WHICH IS INCORPORATED
"The South African Mines, Commerce & Industries."
ESTABLISHED 1881
PUBLISHED EVERY SATURDAY

Ingersoll-Rand
Co.,
Exploration Bldg.,
JOHANNESBURG.

VOL. XXVII., PART I. No. 1362.]

JOHANNESBURG, TRANSVAAL, SATURDAY, NOV. 3, 1917.

[WEEKLY, PRICE 6D.



Counter Current
Barometric
Condensing Plants
Produce
High Vacuums
with Low
Maintenance Cost
and
Little Attendance.

INGERSOLL-RAND

CO.

Exploration Bldgs. Joh'burg.